River Thames Scheme

Protecting our communities
Securing our economy
Enhancing our Thames

Preliminary Environmental Information Report

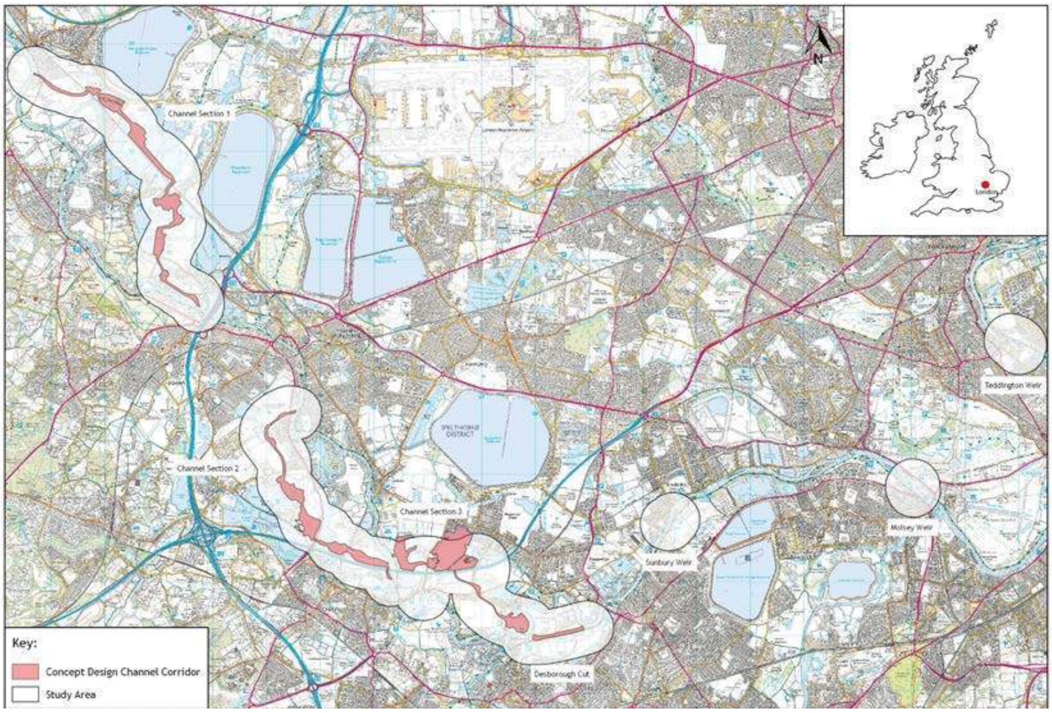
Volume 4
Appendix 9.2

Stage 1 Evaluation Final Report

River Thames Scheme

Capacity Improvements and Flood Channel Project

Stage 1 Evaluation: Final Report



The Evaluation Corridor

Produced for GBV Joint Venture/Environment Agency
TPA Report: 125/2017
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Capacity Improvements and Flood Channel Project

Stage 1 Evaluation: Final Report

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Geophysical survey was carried out by SUMO Services. Supplementary work at Southlea Farm, Datchet was carried out by Povilas Čepauskas, Emilie Dingler, and Johanna Greaves.

EM survey was carried out by Emilie Dingler, Andrew Douthwaite, and Tom Keyworth, under the supervision of Chris Carey of Brighton University.

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Borehole survey was carried out by Tom Keyworth, Tina Roushannafas, Andy Douthwaite, and Johanna Greaves, and was overseen by Andy Howard (independent consultant).

Chris Carey and Andy Howard acted as consultants to the geoarchaeological phases of the evaluation.

The figures for this report were produced by Rachel Townsend, Norma Oldfield, and Michael Lobb.

1 Introduction

1.1 Context: The Proposed Development and Site Locations

1.1.1 The River Thames Scheme (RTS) Capacity Improvements and Flood Channel (CI&FC) Project is being promoted by a partnership of organisations including the Environment Agency, local planning authorities and others. It involves the construction of a flood relief channel in three sections (totalling approximately 14.6km in length and 30-60 metres in width) to increase flood flow capacity; habitat creation and Landscape Enhancement Areas; plus downstream capacity improvements to the Desborough Cut, Sunbury Weir, Molesey Weir and Teddington Weir. The three sections of proposed flood channel are located at: 1. Datchet to Hythe End; 2. Egham Hythe to Chertsey; 3. Laleham to Shepperton (Figure 1.1).

1.1.2 Direct impacts on the archaeological resource will be of three types.

- The construction of the Proposed Channel will involve the removal of all archaeological remains along its route, as will proposed widening of Desborough Cut and the construction of new weirs at Sunbury, Molesey, and Teddington.
- Areas of habitat creation have the potential to damage or destroy archaeological remains, through landscaping and related earth-moving activities, as well as through the disposal of spoil from the Channel excavations which is planned for some of these sites. The exact nature and scope of these activities has not yet been finalised.
- Finally, access roads, compound areas, and other works-related locations have the potential to damage or destroy below-ground archaeology in the areas where they are located. As with habitat creation, the final locations of these areas have not yet been decided.

It is possible that disruption to the archaeological resource through habitat creation and the creation of working areas may be minimised by using the results of the programme of archaeological evaluation to inform the final layout of such areas.

1.1.3 Due to the scale of the proposed Scheme, and the nature of its probable impact on archaeological resources along its route, a programme of archaeological evaluation has been implemented to determine the nature and extent of such resources and to allow effective strategies of mitigation to be put in place (detailed in a Generic WSI, see section 1.2.3 below). This document reports on Stage 1 of this programme of evaluation.

1.1.4 The programme of archaeological evaluation is intended to provide a full survey of archaeological resources potentially impacted by the Proposed Scheme.

1.1.5 Stage 1 evaluation consists of non-invasive and minimally invasive techniques; geoarchaeological, geophysical, and field survey.

1.1.6 Stage 1 evaluation is now complete; the results are reported in this document.

1.1.21 The specific sites targeted for Stage 1 evaluation were (Figure 1.2):

- Southlea Farm, Datchet. Grid ref: SU 9878576148. Postcode: SL3 9BZ.
- Horton, Station Road Wraysbury. Grid ref: TQ 0113674257. Postcode TW19 5NH.

- Thorpe Hay Meadow. Grid ref: TQ 0322870092. Postcode: TW18 3LP.
- Chertsey Abbey Meads. Grid ref: TQ 0474067476. Postcode: KT16 8RN.
- Laleham Golf Club. Grid ref: TQ0457168295. Postcode: KT16 8RP
- Shepperton. Grid ref: TQ 0751866128. Postcode: TW17 9LQ.
- Desborough Island. Grid ref: TQ 0819866217. Postcode: KT13 8LY

The rationale behind the selection of these particular sites can be found in Section 3 below.

1.1.22 A further site identified as being of high archaeological risk during preliminary evaluation, Kingsmead Quarry, Horton (TQ 01175 74554, TW19 5NH) could not be accessed for Stage 1 evaluations. Assessment of this site is planned to take place during Stage 2 evaluation, and during the construction phase.

1.2 Previous Project-Related Archaeological Work

1.2.1 An initial Heritage Summary for the RTS project area (Grindey 2013) identified much heritage interest in the form of designated (for example Scheduled Monuments, Listed Buildings, Registered Parks & Gardens) and undesignated heritage assets along the route of the proposed development. Initial appraisal of lidar data (a remote sensing technology that measures distance by illuminating a target with a laser and analysing the reflected light) also indicated that there were palaeochannels in the Chertsey area.

1.2.2 In line with national planning policy (see Section 1.4 below) a Desk-Based Assessment (DBA) was subsequently undertaken to identify heritage assets and provide an initial baseline assessment of the archaeological potential of the Study Area (Davies *et al.* 2016).

1.2.3 Following the publication of the DBA, an Evaluation Strategy/GWSI document was produced (Davies *et al.* 2017). This presents a general statement of objectives, standards and structure for the planning and implementation of archaeological works, including a strategy for a required archaeological response by project phase and generic specification for the proposed evaluation methods. It also included a preliminary geoarchaeological deposit model based on existing data.

1.2.4 Subsequently, task-specific WSIs were produced for each evaluation methodology. For Stage 1 evaluation, these comprised: Geophysics (Puzey-Broomhead, 2017a); Geoarchaeology (Flintoft and Davies, 2017); and Field Survey (Puzey-Broomhead, 2017b).

1.2.5 The archaeological advisors consulted in the preparation of this document (and the prior documents referenced above) are listed below in Table 1.1:

Nigel Randall	Archaeological Advisor to Spelthorne and Elmbridge Borough Councils	Surrey County Council Heritage Conservation Team
Nick Truckle	Archaeological Advisor to Runnymede Borough Council	Surrey County Council Heritage Conservation Team
Laura O'Gorman	Assistant Archaeological Advisor to London Borough of Richmond upon Thames (LBRUT) and Royal Borough of Kingston upon Thames (RBKUT).	Historic England

Rebecca Lambert	Inspector of Ancient Monuments (Historic England lead for RTS)	Historic England
Jane Corcoran	Science Advisor for the South-East	Historic England
Fiona MacDonald	Archaeological Advisor to Royal Borough of Windsor and Maidenhead (RBWM)	Berkshire Archaeology

Table 1.1: List of RTS Archaeological advisor

1.3 Stage 1 Evaluation Phases

1.3.1 Stage 1 of the field evaluation comprised three phases, briefly detailed below.

1.3.2 Geophysical survey formed the initial phase of Stage 1. The aim of the geophysical surveys was to establish the presence, or otherwise, of buried archaeological remains, and to inform and target any subsequent stages of archaeological evaluation.

1.3.3 Field Survey formed the second phase of Stage 1. This comprised fieldwalking, metal detecting, and earthwork survey, and aimed to establish the presence or otherwise of surface archaeological signatures and/or extant earthworks/topographic features at selected sites, and to inform and target any subsequent stages of archaeological evaluation.

1.3.4 Geoarchaeology formed the third phase of Stage 1. This had a dual function; to refine the existing geoarchaeological deposit model (presented in Appendix 1 of the GWSI), and to inform Stage 2 of the evaluation through the provision of targeted borehole and EM survey data.

1.4 Objectives and scope of this Report

1.4.1 This document forms the River Thames Scheme Final Report for Stage 1 of archaeological evaluation.

1.4.2 The DBA and GWSI highlighted a number of potential issues concerning the setting of heritage assets as a result of the proposed scheme. These form the subject of a separate Setting Study (Moore, 2018) and are outside the scope of this Report.

1.4.3 The report is laid out as follows:

- An introductory chapter, providing a background to the Scheme and the place of Stage 1 archaeological evaluation within it.
- A methodology chapter, laying out the techniques used for each form of Stage 1 evaluation, and providing an overview of the relevant planning legislation and professional standards abided by.
- A chapter describing the principles behind the geoarchaeological risk model, based on the results of geoarchaeological survey, and produced to inform Stage 2 trial trenching.
- Eight results chapters, divided by site. Each of these details the reasons the site was targeted for evaluation, provides a historical and archaeological background, and lays out the research questions addressed. The results of Stage 1 survey are then presented, divided by methodology.

- A concluding chapter, outlining the approach for the Stage 2 evaluation.

1.4.4 The structure of the report has been developed in consultation with stakeholders; in particular, the division of results by site rather than by methodology has been chosen due to the wide geographical spread of the scheme, in order to allow it to be split into county or area-specific sections for public access.

2 Methodology

2.1 Introduction

2.1.1 The aim of Stage 1 Evaluation was to accurately establish and identify the presence of archaeologically significant features within the study area. This evaluation employed multiple surveying techniques including Geophysical Evaluation, Electromagnetic Survey, Geoarchaeological Evaluation and Field Survey Evaluation. This chapter provides a methodology for each of the techniques employed during Stage 1 Evaluation, as well as giving an overview of relevant planning legislation and professional standards.

2.2 Planning Context

2.2.1 **National Planning Policy Framework (NPPF)**
In March 2012 the Department for Communities and Local Government (DCLG) published the National Planning Policy Framework (NPPF). This replaced PPS5: Planning for the Historic Environment. The NPPF is supported by guidance given in the National Planning Practice Guide (PPG) and by specific Historic Environment Good Practice Guides issued by Historic England.

2.2.2 Section 12 of NPPF, paragraph 128, states that:

> *Planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance.*
>
> *As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary.*
>
> *Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and where necessary a field evaluation.*

2.2.3 The Historic Environment Good Practice Advice in Planning Note 2 (Managing Significance in Decision-Taking in the Historic Environment) states that:

> *11. To accord with the NPPF, an applicant will need to undertake an assessment of significance to inform the application process to an extent necessary to understand the potential impact (positive or negative) of the proposal and to a level of thoroughness proportionate to the relative importance of the asset whose fabric or setting is affected.*

2.2.4 In determining planning applications it is recommended that in regard to:

- **Designated Heritage Assets**

  Substantial harm to or loss of a Grade II Listed Building, park or garden should be exceptional. Substantial harm to or loss of designated heritage assets of the highest significance, notably scheduled monuments, protected wreck sites, battlefields, Grade I & II listed buildings, Grade I &*

II registered parks and gardens, and World Heritage Sites, should be wholly exceptional (para.132).*

Where a proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or loss is necessary to achieve substantial public benefits that outweigh that harm or loss (para. 133).

- **Non-designated Heritage Assets**

  In weighing applications that affect directly or indirectly non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset (para. 135).

2.2.5 With regard to planning applications the NPPF recommends to local planning authorities that:

They should also require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible (para. 141).

2.2.6 In addition, paragraph 141 note 30 states:

Copies of evidence should be deposited with the relevant Historic Environment Record, and any archives with a local museum or other public depository.

2.2.7 **Other Considerations**

- *Scheduled Monuments*
  Scheduled Monuments, as defined under the Ancient Monuments and Archaeological Areas Act (1979), are sites which have been selected by a set of non-statutory criteria to be of national importance. These criteria comprise period, rarity, documentation, group value, survival/condition, fragility/vulnerability, diversity and potential. Where scheduled sites are affected by development proposals there is a presumption in favour of their physical preservation. Any works, other than activities receiving class consent under The Ancient Monuments (Class Consents) Order 1981, as amended by The Ancient Monuments (Class Consents) Order 1984, which would have the effect of demolishing, destroying, damaging, removing, repairing, altering, adding to, flooding or covering-up a Scheduled Monument require consent from the Secretary of State for the Department of Culture, Media and Sport.

- *Listed Buildings/Structures*
  Buildings of national, regional or local historical and architectural importance are protected under the Planning (Listed Buildings and Conservation Areas) Act, 1990. Buildings designated as ‘Listed’ are afforded protection from physical alteration or effects on their historical setting.
  Historic England guidance defines all Listed Buildings as of “special architectural and historic interest” and deemed worthy of national protection (https://historicengland.org.uk/listing/what-is-designation/listed-buildings/.

- *Registered Parks & Gardens*
  The Historic Buildings and Ancient Monuments Act 1953 authorises Historic England to compile a register of "gardens and other land" situated in England that appear to be of special historic interest. The decision as to whether a park or garden merits registration is based on an assessment by Historic England as to whether it can be said to be of "special historic interest". Historic England has published criteria against which sites are judged.
  Sites are graded I, II* or II along the same lines as listed buildings. 62% are graded as II, 27% are considered of more than special interest and graded II*, 9% are of exceptional interest and are classified as Grade I.
  A registered park or garden is not protected by a separate consent regime, but applications for planning permission will give great weight to their conservation. The NPPF defines them as designated heritage assets and as such their conservation should be an objective of all sustainable development. Substantial harm to or total loss of a Grade II registered park or garden should be exceptional and for a Grade II* or I registered park or garden such loss or harm should be wholly exceptional.
  Local planning authorities are required to consult Historic England when considering an application which affects a Grade I or II* registered site and the Gardens Trust on all applications affecting registered sites of all grades. The fact that a site is on the Register does not imply that the park or garden is open to the public.

- *Hedgerows*
  Hedgerows of historic importance are afforded protection under The Hedgerow Regulations 1997, section 97 of the Environment Act 1995 (coming into effect in 1997). Any hedgerow which is defined as being of historical or ecological importance may require consent from the local planning authority prior to removal.

Local Policies

2.2.8 There are a number of local planning policies relating to the built and archaeological heritage of the study area. These include, for Berkshire, the RBWM outline Local Plan and for Surrey, the Runnymede Borough Council's Local Plan (Runnymede Borough Council 2007; Sims 2001), the Elmbridge Local Plan (Elmbridge Borough Council 2000) and the Spelthorne Borough Council Local Plan (Spelthorpe Borough Council 2001 and 2009. A number of the local plans have been discontinued and await updates, with existing policies saved.

2.2.9 Greater London planning policies relating to the built and archaeological heritage are outlined in the London Plan (GLA 2015). Policy 7.8 deals with heritage assets and archaeology. The wider RTS Study Area falls within the boroughs of Richmond and Kingston and the Richmond Core Strategy and Kingston upon Thames Core Development Strategy are therefore relevant

2.2.10 The relevant sections of the local policies pertaining to each site targeted during Stage 1 Evaluation are quoted below.

COUNTY OF BERKSHIRE:

2.2.11 **Royal Borough of Windsor And Maidenhead**

Policy ARCH3

Planning permission will not be granted for proposals which appear likely to adversely affect archaeological sites and monuments of unknown importance and *areas of high potential unless adequate evaluation enabling the full implications of the development on matters of archaeological interest is carried out by the developer prior to the determination of the application.*

2.2.12 This policy is relevant to **Southlea Farm, Datchet**.

COUNTY OF SURREY:

2.2.13 **Runnymede Borough Council**

ANCIENT MONUMENTS AND SITES OF ARCHAEOLOGICAL INTEREST (BE14)
The Council will ensure the preservation, enhancement, proper management and interpretation of scheduled, and other nationally important, monuments and their settings and other sites of special archaeological interest and their settings. Any development which would have an adverse effect on these sites or their settings will not be permitted.

Scheduled Ancient Monuments are statutorily protected by the Secretary of State for Culture, Media and Sport and any development affecting them will need the consent of the Department of Culture, Media and Sport. Any applicant for planning permission affecting such a monument will be informed of this additional requirement. The Borough has a rich archaeological heritage, especially near the Thames and the site of Chertsey Abbey and St. Ann's Hill.

The County Council has identified sites of special archaeological interest. These sites are irreplaceable evidence of the area's pre-history and history and wherever possible they should be preserved and properly maintained and interpreted in order to maximise their value.

AREAS OF HIGH ARCHAEOLOGICAL POTENTIAL (BE15)
The Council, in consultation with Surrey County Council, has identified areas of high archaeological potential in the Borough. Where development is proposed within these areas the Council will require the prospective developer to undertake an archaeological assessment, and where appropriate a site evaluation before the planning application is determined. Where finds are made they should be treated in accordance with Policy BE16.

The Council will seek to secure an archaeological assessment of any proposal affecting an Area of High Archaeological Potential before a planning application is submitted. Any archaeological assessment should be carried out by a suitably qualified organisation. The assessment may identify the need for site evaluation in order to provide sufficient information about archaeological remains on the site; this requirement will be determined by the County Archaeologist. Where an archaeological assessment or evaluation identifies a site or other remains of archaeological interest the prospective developer will be required to make appropriate provision for their preservation or, if this is not practicable, their excavation and recording.

PRESERVATION AND RECORDING OF ARCHAEOLOGICAL REMAINS (BE16)
Where all or part of an important archaeological site is affected by proposed development, the first priority will be in situ preservation. Where it can be demonstrated to the satisfaction of the Council that this is not feasible, the Council will require adequate excavation and an accurate record to be made of any archaeological remains which will be destroyed. This will preferably be achieved through agreements.

2.2.14 These policies are relevant to **Thorpe Hay Meadow**, **Laleham Golf Club**, and **Chertsey Abbey Meads. Chertsey Abbey Meads** is close to a Scheduled Ancient Monument and is itself an area identified as being of high archaeological potential. **Laleham Golf Club** has a Scheduled Ancient Monument in its northern section.

2.2.15 **Elmbridge Borough Council**

DEVELOPMENT WITHIN AREAS OF HIGH ARCHAEOLOGICAL POTENTIAL (HEN17) *In considering proposals for development within areas of high archaeological potential, the council, in consultation with Surrey County Council, will: (i) require that an initial assessment of the archaeological value of the site be submitted as part of any planning application; (ii) where, as a result of the initial assessment, archaeological remains are considered to exist, require an archaeological field evaluation to be carried out prior to the determination of any planning application; (iii) determine whether the archaeology identified is important enough to warrant preservation in situ and, where remains are to be left in situ, impose conditions or seek agreement, where appropriate, to ensure that damage to the remains is minimal; (iv) where important archaeological remains are found to exist but their preservation in situ is not justified, seek a full archaeological investigation of the site in accordance with a scheme of work to be agreed in writing with the council prior to the granting of planning permission; (v) require that the results of the investigation and any excavation be published and made available for display at either the Elmbridge museum or other suitable location.*

8.30. These sites are in addition to Scheduled Ancient Monuments and County sites of archaeological importance. They are based on information contained in the County's Sites and Monuments Record.

8.31. It is always necessary to take into account that unexpected discoveries can be made. This is partly because very few areas have been systematically surveyed for archaeological purposes.

2.2.16 These policies are relevant to **Desborough Island**.

2.2.17 **Spelthorne**

ARCHAEOLOGY, ANCIENT MONUMENTS AND HISTORIC LANDSCAPES
4.73. Spelthorne is situated entirely on various alluvial and gravel deposits associated with the Thames, whose river terraces were attractive to ancient settlements. This has resulted in an area rich in archaeological finds and with great potential for further discoveries. From the Neolithic period onwards, significant finds including small settlements have been found across a wide area of Spelthorne with many Roman remains found around the important Roman town of Staines. The Council will seek to protect this archaeological heritage. Government guidance contained in PPG16 paragraph 8 contains a presumption in favour of the preservation of nationally important remains, whether scheduled or not, and their settings, and paragraphs 15 and 16 note the need to protect other important sites identified in the development plan. On the basis of currently available information all Scheduled Ancient Monuments are worthy of preservation, their sites are shown on the Proposals Map. Close liaison will be maintained with the Environment Department of Surrey County Council which holds the archaeological Sites and Monuments Record and with the Surrey County Archaeological Unit which conducts archaeological investigation and research. Any new areas of archaeological importance identified through the national Monuments Protection Programme of

English Heritage or local research will be added to the areas covered by the policies which follow. Where archaeological investigation is required in the context of a development proposal, the applicant will be asked to fund the work deemed necessary. Planning conditions or legal agreements will be used where appropriate to secure compliance with policies.

Work in recent years has resulted in sites of major archaeological importance being discovered in the course of gravel extraction, where no previous specific evidence existed for them. In view of Spelthorne's river gravel base, it is reasonable to assume that any large scale development is likely to affect features of archaeological interest and that discoveries could be made in any size of new development site. Any new development proposal for sites larger than 0.4 hectares and smaller sites where requested should include agreed arrangements for archaeological assessment or evaluation, and where appropriate investigation, and allow for future preservation of remains as deemed appropriate.

POLICY BE26

Outside the defined areas of high archaeological potential, the Borough Council will require an agreed scheme of archaeological assessment or evaluation appropriate for the site concerned to be submitted with any new development proposal for a site larger than 0.4 ha, and for smaller sites if deemed necessary. Where evidence of significant archaeological remains is found then the requirements set out in policy BE25 will apply.

Where other land is identified as of historic interest but is not covered by historic building, conservation area or archaeological protection policies, the Council will nonetheless seek to preserve the historic and amenity value of such land. This may include landscaped gardens and open landscapes. Where such areas are affected by development proposals it is important to record their historic details. The extent of such areas is to be further investigated by Surrey County Council for the County as a whole but in Spelthorne currently known sites are Sunbury Park and Laleham Park.

2.2.18 These policies are relevant to **Shepperton**.

2.3 Professional Codes, Standards, & Guidance

2.3.1 All work was undertaken by suitably qualified professional archaeologists, and adhered to professional guidelines and standards laid out by the Chartered Institute for Archaeologists.

2.3.2 All site work and reporting was carried out in accordance with: *Standards and Guidance for Archaeological Assessment and Evaluation* prepared by the Chartered Institute for Archaeologists (CIFA 2014).

2.3.3 Geophysical survey was carried out by SUMO Services Ltd. SUMO Services is a Registered Organisation and as such is committed to upholding the standards and policies set out by the chartered Institute for Archaeologists. It is also a member of the EuroGPR Association.

2.3.4 Geophysical site work and reporting was carried out in accordance with English Heritage Geophysical Survey in Archaeological Field Evaluation, 2008, and CIFA Paper 6: The use of Geophysical Techniques in Archaeological Evaluations.

2.3.5 Fieldwalking and metal detecting was carried out by suitably qualified staff members of Trent and Peak Archaeology. Earthworks survey was carried out by suitably qualified staff members of ArcHeritage. Both TPA and ArcHeritage are Registered

Organisations, part of the wider York Archaeological Trust organisation, and as such are committed to upholding the standards and policies set out by the Chartered Institute for Archaeologists.

2.3.6 Field survey was carried out in accordance with Historic England Guidance: *Our Portable Past* (metal detecting), and Historic England Guidance, *Understanding the Archaeology of Landscapes* (2007) (field survey in general).

2.3.7 Geoarchaeological survey was conducted by specialist Trent and Peak Archaeology staff and subcontracted staff trained in geoarchaeological methods. This included window sampler monitoring, recording and sampling, interpretation, and further stages of post-survey analysis.

2.3.8 EM survey was completed by sub-contracted staff at the University of Brighton and trained staff at TPA.

2.3.9 Geoarchaeological site work and reporting was carried out in accordance with: Historic England Guidance document *Geoarchaeology: Using earth sciences to understand the archaeological record* (2015), *Practical and Theoretical Geoarchaeology* (2006), and Historic England Guidance document *Understanding the Archaeology of Landscapes* (2007).

2.4 Geophysical Survey (Figure 2.1)

2.4.1 Survey strategy, equipment and methodology were informed by current professional guidance and best practice (English Heritage 2008; Schmidt *et. al*. 2016; CIfA 2014b).

2.4.2 Geo-magnetic survey was undertaken using a gradiometer over the selected survey areas. Geo-magnetic survey, using fluxgate gradiometers, is typically the preferred technique for rapid evaluation of archaeological sites and provides a means of assessing the potential of the site. In particular this technique can be particularly useful for locating features such as infilled enclosure ditches where they contain evidence of burning deposited within domestic or industrial contexts.

2.4.3 Survey was undertaken with handheld instruments.

2.4.4 The detailed magnetic survey was carried out using a Bartington Grad 601-2. The instrument consists of two fluxgate sensors mounted 1m vertically apart and very accurately aligned to nullify the effects of the earth's magnetic field. Readings relate to the difference in localised magnetic anomalies compared with the general magnetic background.

2.4.5 A temporary grid system was established over the site and marked out using water soluble paint, wooden pegs or canes. The location of the grid was set out using a Trimble R8 Real Time Kinematic (RTK) VRS Now GNSS GPS system. The RTK GPS system can locate a point on the ground with far greater accuracy than the standard GPS unit. It theoretically accurate to some 0.01m and referenced to OS co-ordinates.

2.4.6 Readings were taken across full 30m grids, using a 1m transect spacing with data point collection of 0.25m intervals, a standard sampling-density for the evaluation of any archaeological remains in accordance with the English Heritage Guidelines for Geophysical Survey in Archaeological Field Evaluation (2008).

2.4.7 The Grad 601-2 has a typical depth of penetration of 0.5m to 1.0m. This is increased where strongly magnetic objects have been buried in the site. The collection of data at 0.25m centres provides an appropriate methodology balancing cost and time with resolution.

2.4.8 The readings were logged consecutively into the data logger which was downloaded daily into a portable computer whilst on site. At the end of the job, data was transferred to the office for processing and presentation.

2.4.9 After data collection was complete measurements were taken to allow the re-location of the survey area. This is necessary for the production of maps in the report and for any subsequent re-establishment of the survey grid by other workers.

2.4.10 The data was processed to remove any instrument error or survey defects and to enhance any anomalies associated with potential archaeological features. Processing of the data was carried out using the specialist software Anomoly. This emphasises various aspects of the data not easily seen in the raw data. Basic processing of the magnetic data involved 'flattening' the background levels with respect to adjacent traverses (Zero Mean Traverse). 'Despiking' was also performed to remove the anomalies resulting from small iron objects often found on agricultural land. Following basic processing it was possible to carry out low pass filtering to reduce 'noise' in the data and hence emphasise the archaeological or man-made anomalies.

2.5 Field survey: fieldwalking (Figure 2.2)

2.5.1 The aim of fieldwalking survey was to sample the survey area, and accurately establish and identify the presence of archaeologically significant surface artefact scatters.

2.5.2 Fieldwalking was carried out at Datchet, Southlea Farm, in fields which were under cultivation in 2017.

2.5.3 The fieldwalking survey was undertaken in suitable conditions; i.e. on recently cultivated land which had been allowed to weather but was without significant vegetation growth.

2.5.4 The fieldwalking survey was carried out in two teams of four people.

2.5.5 The areas to be walked were laid out in evaluation transects spaced at 10m intervals (1m search strip). This provided a 10% sample of the field.

2.5.6 Finds along each 1m wide ‘viewing window’ were retained in accordance with the collection strategy laid out in Table 2.1 below.

2.5.7 Artefacts were ignored or recorded as per the collection strategy’s demands. Findspots were recorded by transect, and additionally recorded to +/- 50mm in three dimensions using a Leica CS10 GPS, with data stored on computer.

2.5.8 Each find was allocated a unique ID number.

2.5.9 Fieldwalking finds were washed, marked and logged on an Excel spreadsheet.

2.5.10 Finds were initially characterised in-house. Subsequently, prehistoric and Roman ceramics and worked flint were sent to appropriate specialists for further analysis. The reports produced are included in chapter 3 of this report.

2.5.11 A spot-dated site concordance of finds has been produced (see Appendix 1). These have been mapped using AutoCAD to permit identification of clusters and other significant attributes of the distributions.

Category	**Subcategory**	**Treatment**
Pottery	Post-medieval or earlier	Record & Collect
	Modern	Record
Brick/Tile	Machine-made	Record Spread
	Handmade	Record Spread & Collect Sample
Baked Clay		Record & Collect
Bone		Record & Collect
Flint	Worked	Record & Collect
	Unworked (burnt)	Record Spread & Collect Sample
Stone	Worked	Record Spread & Collect Sample
Mortar		Record Spread & Collect Sample
Glass	Modern	Record
	Post-medieval or earlier	Record & Collect
Slag		Record Spread & Collect Sample
Coke/coal		Record Spread
Charcoal		Record Spread
Clay pipe		Record & Collect
Plastics		Record Spread

Table 2.1: Collection Strategy for Fieldwalking

2.6 Field Survey: metal detecting

2.6.1 The aim of the metal detecting survey was to sample the selected evaluation areas, and accurately establish and identify the presence of archaeologically significant areas through the location of metal artefacts within the ploughsoil.

2.6.2 Metal detecting was carried out at Datchet, Southlea Farm, in fields which were under cultivation in 2017.

2.6.3 Metal detecting was undertaken by suitably qualified and experienced TPA staff members.

2.6.4 The metal detector used was an X-Terra 705; this has a discrimination mode to allow non-ferrous, ferrous or all metals to be targeted, and was employed for the duration of the survey.

2.6.5 Due to severe time constraints imposed by the cropping regime at Southlea Farm, Datchet, it was not possible to carry out a full metal detector survey as laid out in the Field Survey WSI. As an alternative, the 10m transect laid out for fieldwalking (described in section 2.5 above) was utilised and as much as possible of the area scanned in the time available.

2.6.6 Artefacts were retained where they were of a pre-modern date. Other metal was noted and logged.

2.6.7 Metal artefacts recovered through metal detecting were included with those retrieved through fieldwalking, with locations recorded by GPS as described in 2.5.6 above.

2.6.8 Subsequent analysis of metal artefacts was carried out as described in 2.5.9 and 2.5.10 above.

2.7 Field Survey: earthwork survey (Figure 2.3)

2.7.1 The aim of earthwork survey was to accurately establish and identify the presence of archaeologically significant earthworks or topographic features.

2.7.2 Earthwork survey was carried out at Chertsey, Abbey Meads, and Laleham Golf Course.

2.7.3 The earthwork survey was carried out in accordance with Historic England Guidance, *Understanding the Archaeology of Landscapes* (2007).

2.7.4 Following an initial walkover/inspection of the site, targeted earthwork survey was undertaken in systematic zones. Feature locations were recorded by GPS, to a minimum accuracy of c.5 metres. Identified features were recorded as points, lines or polygons, depending upon their size.

2.7.5 A unique feature number was assigned to each identified feature. Every feature was described using the following data fields:

- ID number
- site type (HE thesaurus)
- brief description
- related features
- period
- condition threats
- landuse
- topography

2.7.6 A photograph of each feature was taken, in order to aid identification or interpretation. These photographs may be viewed in the Plates section at the end of this document.

2.7.7 The new survey data, along with any relevant features that were identified during the research, but which could not be seen on the ground, was collated into initial drawings (digitised and hard copy). Following this, a GIS-compatible digital output was produced.

2.8 Geoarchaeological Survey: window samples (Figure 2.4)

2.8.1 The aim of the window sample survey was to identify and record the different types and relative depths of Holocene deposits overlying late Pleistocene sand and gravels across the targeted sites.

2.8.2 This stage of window sampling was designed to provide a first approximation of the character of the sedimentary deposits and their potential for informing records of human activity, as well as providing information (via the enhanced borehole model) that could inform other archaeological fieldwork strategies (e.g. trial trenching).

2.8.3 A further stage of geoarchaeological survey will be carried out as necessary in later stages of evaluation and/or mitigation, informed by the results of the Stage 1 work.

2.8.4 In addition to recording the sedimentary sequence, appropriate samples of waterlogged material were recovered for initial palaeoenvironmental assessment. This aimed to determine the presence/absence and condition of preservation of plant remains, as well as being used as a preservation indicator for proxy remains more generally. Deposits were also sampled to provide material for radiocarbon dating. Provision was made for up to 40 AMS dates and 36 were submitted for age determination to SUERC laboratories. With dating samples, it should be borne in mind that fluvial environments can prove one of the most challenging environments for securing robust chronologies since a range of taphonomic processes can lead to the recycling of materials overtime.

2.8.5 Window samples were completed with a small track-mounted percussion rig; either a Dando Terrier or a Competitor 130 NG. 1.00m plastic liners were used in the barrel for clean recovery. Boreholes were drilled up to a maximum depth of 6 metres, or until the underlying Pleistocene sand and gravel or bedrock was encountered.

2.8.6 Recovered borehole samples were opened on site, recorded, and sub-samples taken where relevant. Recording included: date; borehole number and location; a detailed sediment description (colour, sediment size and general distribution, sediment composition, organic composition, general interpretation etc.); changes within each unit; depths of changes; final depths; and a sample list.

2.8.7 Samples were recovered from organic deposits for range-finder radiocarbon dating. Depending on the nature of the stratigraphy, this either took the form of a regularly-spaced sequence taken from throughout the organic layer(s), or of discrete samples taken from organic layers. Samples were collected from uncontaminated sections of the core, using clean tools. Samples were stored in sealed plastic bags to avoid drying, and were kept in a temperature-controlled environment; a coolbox for initial field-storage and transport, and a fridge maintained below 5 degrees centigrade for longer-term storage.

2.8.8 Once borehole cores had been extracted, recorded, and sampled, the remaining sediment was backfilled into the borehole. Where there was insufficient sediment to fill the space, gravel was used to fill the rest of the hole to the original ground surface level.

2.8.9 Samples assessed as having environmental potential were retained for further analysis, should this be deemed necessary to provide further information about the specific site they were extracted from, or to better inform the general deposit model. Any such further analysis is scheduled to take place during the reporting phase of Stage 2 survey. Additionally, unassessed samples will be retained until the completion of the mitigation phase in case they later represent our best opportunity to characterise specific deposits.

2.9 Geoarchaeological Survey: EM survey

2.9.1 The aim of the EM (electromagnetic) geophysical survey was to measure the conductivity of deposits at selected study sites, which in turn, is a function of groundwater conditions and the variation in sediment texture and structure (e.g. bedding); such variations can provide an indication of buried landforms such as palaeochannels or palaeolandsurfaces.

2.9.2 In contrast with other geophysical methods, EM survey measures conductivity at depths up to 3.00 metres. The initial deposit model confirmed that the top of the underlying (late Pleistocene) gravel occurs between 0.5 and 4 metres depth (where it has not been disturbed by later activity), making this method effective in identifying underlying landforms and surfaces attributable to the Upper Palaeolithic.. In particular, EM survey attempted to identify the location and distribution of any high areas ('islands') of gravel within the floodplain.

2.9.3 The EM survey methodology was developed in order to provide a rapid, cost effective, evaluation of valley floor sediments in order to supply information useful for archaeological prospection, in particular for the location of evaluation trenches during subsequent phases of the project. It also provides useful information for the development of a geomorphological model for the sites surveyed, giving a general coverage which can be combined with the precise but narrowly-focussed borehole information.

2.9.4 The EM survey was carried out using a Geonics EM31-MK2 ground conductivity meter. The Geonics EM31 uses a varying electromagnetic field to measure changes in near surface conductivity. For example clays and silts are more conductive to electrical currents than sands and gravels. This equipment records deep deposits within the alluvium at up to three different depths at a time. From a measure of changes in ground conductivity on a grid of continuous recording stations across a site it is possible to produce a 2D map as a proxy for the distribution of sands, gravels and finer grained sediments in the near surface zone (i.e. top 3m).

2.9.5 The Geonics EM 31 Ground Conductivity meter was chosen for the geoelectrical survey because at low electrical induction numbers the terrain conductivity is directly proportional to instrument reading (of secondary to primary magnetic field). The ground conductivity is a function of the electrical conductivity of the material (soil or rock), the fluid content and the thickness or depth of individual layers within the ground (Geonics, 1980a). Because the instrument uses an electromagnetic field, maps of geological variations and subsurface features associated with the changes in ground conductivity can be produced without needing to directly place electrodes into the ground.

2.9.6 The EM31-MK2 is also equipped with DGPS. No physical grid denoting the survey transect is therefore established, and ground conductivity measurements are directly recorded together with a DGPS location for real time spatial positioning tied into the NGR.

2.9.7 This EM31-MK2 therefore allowed the survey to be undertaken both quickly and with the precision necessary to measure small changes in conductivity, with continuous readout and data collection across the survey area.

2.9.8 The survey involved walking across the field in linear transects (3-5m apart). It was carried out by members of TPA staff trained and monitored in the EM31's use by experts from the University of Brighton. Data was downloaded following each day's work to a laptop computer and backed up to TPA servers weekly.

2.9.9 The data was interpreted by Dr Chris Carey at the University of Brighton. Ground conductivity values were contoured using ArcGIS 8.2 and plotted with high values (blue or cool colours) and low values (red or hot colours). Areas of high conductivity were interpreted as being indicative of main channel zones, with 'islands' of low conductivity indicative of higher gravel areas noted within the channel zones and around the margins of the valley floor.

3 Geoarchaeological Survey: the risk model

3.1 Introduction

3.1.1 As part of Stage 1 Evaluation, risk models were produced for individual sites, which combined the results of Stage 1 evaluation techniques – in particular shallow and deep geomagnetic survey and borehole survey. These models provided a visual representation of the differential potential for the presence or absence of archaeological remains across sites.

3.1.2 Detailed risk modelling was carried out for each site where sufficient data could be gathered (i.e. more than one form of geoarchaeological survey could be carried out and producing significant datasets):

- Southlea Farm, Datchet (excluding the Datchet Lakes area).
- Thorpe Hay Meadow.
- Chertsey Abbey Meads.
- Laleham Golf Club.
- Desborough Island.

Less detailed models were produced for the other sites evaluated as part of the scheme: this was generally done where only a single form of geoarchaeological survey was carried out or where results were sparse or of perceived low quality.

3.1.3 The results of this work for each of these sites are presented in the concluding section of the geoarchaeological results portion of each site-specific chapter in this report; they have also been used to inform the trial trenching layout at the majority of the above sites, and brief details can be found in the Stage 2 Evaluation WSI (Puzey-Broomhead, 2018).

3.1.4 This section outlines the principles upon which the archaeological risk model was produced.

3.2 The need for the risk model

3.2.1 In riverine environments subject to frequent overbank flooding, and to substantial changes in the route of the river channel over the Holocene period, such as is present in the area of the Thames valley covered by the RTS, detection of archaeological sites by means such as aerial photography or geophysical survey can be hindered by the presence of fine-grained alluvium which masks them from visibility to such methods.

3.2.2 An archaeological site buried under 1m or more of alluvium is unlikely to be detected by the geophysical techniques commonly used in archaeology (English Heritage, 2008: 16).

3.2.3 Current standard recommendations in such situations suggest a programme of trial trench evaluation, possibly supplemented by analysis of lidar data and by subsurface core sampling (*ibid*).

3.2.4 This has the disadvantage that the layout of trial trenches in such a situation is relatively untargeted, and risks either over-evaluating areas in which archaeological remains are very unlikely to be present, or under-evaluating areas where they have a high potential to survive.

3.2.5 The current model therefore attempts to assess the potential for the presence or absence of archaeological remains, through modelling the underlying superficial geology and combining this model with information about the relative attractiveness of the various geological zones for past human settlement.

3.2.6 This can then be used to produce a more refined trial trench layout, which targets areas of high archaeological potential for more intensive trenching, and assesses areas of low potential using methods more suitable for recovery of the types of information they can provide (i.e. organic remains in floodplain mires etc).

3.3 Electromagnetic data used in constructing the risk model

3.3.1 The EM data generated by the RTS Stage 1 survey measures bulk conductivity in millisiemens per metre, to a depth of approximately 3m below ground level.

3.3.2 Areas of water or fine-grained sediments will result in high conductivity readings.

3.3.3 Areas of free-draining, coarse-grained sediments such as gravel and sand will results in low conductivity readings.

3.3.4 In the context of the Thames Valley, a concentration of high conductivity readings is therefore likely to represent palaeochannels, or other areas of deep, fine-grained alluvial deposits, and areas of low conductivity readings are likely to represent gravel terraces (within the RTS study area the Late Pleistocene Shepperton Gravel Member).

3.3.5 Readings across the sites to be assessed can be represented visually, providing an image of the underlying superficial geology.

3.4 Borehole data used in constructing the risk model

3.4.1 Whilst the EM data can provide a good overview of relative areas of deep and shallow fine-grained alluvial deposits across as site, it is necessary to combine this with data derived from borehole survey to ascertain absolute depths to the Pleistocene surface or bedrock and composition of overlying sediments.

3.4.2 Furthermore, dating of palaeoenvironmental remains recovered from the borehole cores allows an absolute chronology to be constructed.

3.5 Assessing archaeological potential

3.5.1 The likelihood that a particular part of a site was attractive to past human settlement is based on a combination of experience of prospecting for archaeologically similar sites in riverine environments and uniformitarianism.

3.5.2 Areas of high conductivity, representing areas with active river channels or those frequently flooded, are attractive as a resource, but are not suitable for either long or short-term inhabitation. These areas are defined in the risk model as being of low archaeological potential.

3.5.3 Areas of low conductivity, representing gravel islands or terrace edges beyond the risk of flooding, are attractive for settlement, especially where they border the rich ecological resources represented by higher conductivity areas. These areas are defined in the risk model as being of high archaeological potential.

3.5.4 Areas in between the ‘wetland’ and ‘dryland’ vary in their potential for past human settlement. Some may be suitable for seasonal settlement and associated practices, for example, seasonal grazing; others may preserve traces of water-related activity such as mooring places or causeways. These areas are defined in the risk model as being either of low-moderate, moderate, or moderate-high archaeological potential depending on their specific conductivity profile/depth of alluvium.

3.5.5 Whilst areas of high conductivity are considered to be of low cultural archaeological potential, they may have the capacity to provide considerable palaeoenvironmental information. However, such information is not necessarily best retrieved through trial trenching.

3.5.6 Secure dating control is key to refining the risk model beyond these general principles; an area which has been consistently wet since the early Holocene is of much lower dryland archaeological potential than an area which has been dry until relatively recently but which is now overlain by shallow alluvial deposits (especially given that these deposits are likely to have protected the site from damage by more recent activity).

3.5.7 The model can also be used to assess the usefulness or otherwise of the geophysical (gradiometer) data: at sites where the model suggests shallow gravel, areas where no features are detected are likely to have a genuine lack of past human activity; at sites where the model shows alluvium over 1m thick, an apparently negative geophysical survey is of little use in assessing the likelihood or otherwise of surviving archaeological remains.

3.6 Construction of the risk model

3.6.1 The initial stage involves the production of a standard EM conductivity map incorporating all data derived from the site being modelled.

3.6.2 The data is interpreted is used to construct a map of high, moderate, and low conductivity zones.

3.6.3 This is integrated with borehole data from the site to produce a map showing the depth below ground level of the surface of the underlying Pleistocene gravel.

3.6.4 This can be combined with lidar data, if appropriate, to further refine the position of landforms including palaeochannels, gravel terraces and islands.

3.6.5 Together, these maps are used to produce a composite map showing areas of archaeological potential, assessed as high, high-moderate, moderate, moderate-low, or low according to the criteria discussed in Section 2.14 above.

3.6.6 Where possible radiocabon dating of samples extracted from borehole cores has been used to further refine models, as discussed in Section 2.14.

3.7 Using the risk model

3.7.1 Once a model has been created for a site it can be used as the basis for informing trench layout, which focuses on the areas of high archaeological potential. The exact evaluation percentage used for areas of differing potential varies, and is dependent on the requirements of the various stakeholders, combined with the specific needs of each site.

3.7.2 In general, a percentage of 5% for high potential areas, 3% for moderate potential areas, and 1% for low potential areas has been used for the RTS scheme, although this varies from site to site. The specifics of the trench layouts for each site can be found in the Stage 2 WSI (Puzey-Broomhead, 2018).

4 Results: Southlea Farm, Datchet

4.1 Introduction

4.1.1 Southlea Farm is the location of a significant multi-period occupation site. The presence of this site resulted in the full proposed channel area at Southlea being characterised as of high archaeological risk during the initial desk-based evaluation. This was investigated as part of Stage 1 evaluation.

4.1.2 This section comprises a brief introduction to the site, and describes the scope of the Stage 1 evaluation. This is followed by: an archaeological and historical background (Section 4.2), research context (Section 4.3), and reports on the results of the various facets of Stage 1 evaluation (Sections 4.4 to 4.6). A conclusion, with recommendations for further work, follows (Section 4.7).

Site location and scheme impact

4.1.3 The site comprises 43.5 hectares of level land, divided into twelve fields (Figure 4.1).

4.1.4 Fields 1 to 3 and 6 to 12 form part of Southlea Farm, a mixed arable and livestock farm. During the Stage 1 evaluation Fields 6 and 8 were cattle pasture, Fields 1 and 2, and Fields 9 to 11 were under cereal cultivation, and Field 7 was sugar beet. Field 12 was wooded, and Field 3 was pasture.

4.1.5 Fields 4 and 5 are in separate ownership and were grassed.

4.1.6 The proposed scheme at Southlea Farm will impact a 75m wide strip across Fields 3, 6, 11, 9, and 10. The maximum depth of impact is 4.1m. The Stage 1 evaluation included a wider area, beyond the proposed channel impact area. Areas to be evaluated generally encompassed the entirety of each modern field in which impact would be present. As Stage 1 survey techniques largely rely on medium-scale spatial modelling to be effective, this was felt to be the best way to approach evaluation at this site.

4.1.7 The underlying geology of the site is London Clay, consisting of clay, silt and sand, overlain by superficial deposits of the Shepperton Gravel Member, consisting of sand and gravel.

Fieldwork extent and constraints

4.1.8 The original set of survey techniques proposed for the Stage 1 evaluation at this site included **geophysical survey**, **field survey** (comprising fieldwalking and metal detecting), and **geoarchaeological survey** (comprising EM survey and window samples) in all fields other than 12 (which was unsuitable due to being densely wooded). However, for various reasons (detailed in 4.1.9 to 4.1.11 and Table 4.1 below), changes were made during Stage 1 evaluation such that not all techniques were utilised in all fields.

4.1.9 Initial designs included works within Fields 1 and 2. During the fieldwork phase alterations to the channel design were made which removed these works. Geophysical survey and EM survey in Field 1 had been carried out before these alterations were made, but no further evaluation work was carried out in these fields.

4.1.10 Geophysical survey in Fields 4, 5 and 11 revealed a very large pipe running east from the Thames Water pumping station immediately adjacent to Field 4. As the width of the pipe encompassed the majority of the width of Fields 4 and 5, it was decided that further evaluation in these fields was unnecessary. Evaluation in Field

11 continued as normal, as the pipe occupied a relatively small proportion of its total area.

4.1.11 Field 3 could not be accessed, and was not included in any form of Stage 1 survey. The lidar data from adjacent fields suggests that it encompasses a palaeochannel system located across the north-western part of the site (see section 4.6 below).

4.1.12 Accessibility of Fields 6 to 11 was heavily constrained by the demands of the cropping schedule of Southlea Farm. In addition, Field 7 could not be accessed for any form of survey. Only Fields 9, 10, and 11 were ploughed and left open for more than 1 day during the course of 2017, therefore fieldwalking and metal detecting could only take place in these fields. However, it was not possible to complete full metal detecting surveys in any of these fields, or to fully complete the fieldwalking survey in Field 10, as each field was accessible for less than a week. EM survey and geophysics were completed for all fields other than 7. Access for the borehole survey was refused for Field 11.

Field / Technique	**1**	**2**	**6**	**7**	**8**	**9**	**10**	**11**
EM	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Geophysics	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Boreholes	No	No	Yes	No	Yes	Yes	Yes	No
Field Walking	No	No	No	No	No	Yes	Partial	Yes
Metal Detecting	No	No	No	No	No	Partial	Partial	Partial
Direct Impact from Proposed Channel	No	No	Yes	No	No	Yes	Yes	Yes

Table 4.4.1: Stage 1 survey techniques carried out at Southlea Farm, Datchet.

4.2 Historic and Archaeological Background

Mesolithic

4.2.1 Lithic findspots of this date are recorded at Datchet.

Neolithic

4.2.2 Isolated findspots of lithic finds are reported around Datchet; finds of Neolithic axes are also recorded from the river below Datchet. Wessex Archaeology have recently (February 2018) identified a Neolithic causewayed enclosure at Riding Court Farm, Datchet, approximately two kilometres north of Southlea Farm.

Bronze Age

4.2.3 A series of ring ditches have been identified through cropmark survey at Southlea Farm; these were further investigated by the Datchet village society (see below), and are further investigated as part of the current works. Further ring ditches have been noted at Albert Bridge/Datchet and a possible Bronze Age burial with grave goods at Datchet.

Iron Age

4.2.4 Iron Age pottery and enclosures have been identified at Southlea Farm. These were further investigated by the Datchet village society (see below), and are further investigated as part of the current works. An Iron Age sword was recovered from the Thames at Datchet.

Roman

4.2.5 Roman finds have been identified as part of investigative works at Southlea Farm (see below).

Early Medieval

4.2.6 Datchet is listed in the Domesday survey of 1086 (*Daceta*) and in one earlier 10th century charter (Mawer and Stenton 1925, 234). A Saxon coin hoard was found at Southlea Farm.

Medieval

4.2.7 St Helen's Monastery, Bishopsgate owned land and property in Datchet. The potential 'grange' has been associated with a site at Southlea Farm south of the current farmhouse. However the only remains (the listed garden walls) are of 17th or 18th century date and are probably associated with the much later Southlea House. A number of broad, low banks visible on lidar survey are likely to represent ploughed-out field boundaries or remains of baulks/headlands within the medieval open fields surrounding Datchet.

Post-Medieval

4.2.8 Several listed buildings lie in the core of Datchet and its Conservation Area. 18th century mapping shows that the majority of the surrounding area comprised enclosed fields at this date.

Previous Archaeological Work at Southlea Farm

4.2.9 Datchet Village Society carried out an extensive programme of fieldwork at Southlea Farm between 1998 and 2002. This involved three forms of investigation: magnetometer survey, fieldwalking, and small-scale excavation.

4.2.10 The area covered by magnetometry was similar to that surveyed in 2017, but did not include Fields 4 and 5, and did cover Fields 2 and 7, the whole of Fields 6 and 9, and part of a field not numbered for the 2017 investigations, lying to the south east of Field 2.

4.2.11 Fieldwalking was carried out across Field 11 and the north-east corner of Field 9. The results of the magnetometry and fieldwalking are discussed in the relevant sections below, in order to place the RTS results into better context.

4.2.12 Excavation was carried out in Field 2, subsequent to the identification of an enclosure and associated features during previous magnetometer survey of the field. Three small trenches were excavated to investigate ditches relating to the enclosure. Pottery retrieved from these suggested occupation in this field dating to the Late Iron Age and early Roman period.

4.3 Research Context

4.3.1 The relevant research framework for the evaluation work at this site is:

- *The Solent-Thames Research Framework for the Historic Environment Resource Assessments and Research Agendas* (Hey and Hind 2014)

4.3.2 Research themes identified from the above framework are detailed below in chronological order.

4.3.3 **Later Bronze Age and Iron Age**
Social Organisation
Large-scale land divisions are not well understood and there is a need to clarify their frequency, to discover whether these might have defined land rights and ownership or land use areas, and to discover who organised them.

4.3.4 There is potential to investigate later Bronze Age and Iron Age land divisions at Southlea Farm, based on the results of the Datchet Village Society works, and Stage 1 evaluation.

4.3.5 **Roman**
Communications and Trade
The use of the Thames and its tributaries for the movement of goods and people requires investigation. The location of river crossing-points needs to be sought.

4.3.6 There was thought to be some potential to identify Roman communications infrastructure connected to the River Thames at Southlea Farm, as the site lies on the banks of the Thames. There does appear to be evidence for Roman settlement at the site, though whether it is communications-related cannot be determined at this stage.

4.3.7 **Early Medieval**
Landscape and land use
Better understanding of the process of agricultural intensification in the mid to late Saxon period and the origins of open field system.

4.3.8 ***Transport and Communication***
There is very little evidence for early medieval activities along the Thames waterfront, though recent open area excavations at Dorney in Buckinghamshire hint at the possible importance of the waterfront in the Middle Saxon period, away from the main known areas of dense settlement. There is a need to focus on gathering evidence from the Thames waterfront.

4.3.9 Whilst these research themes were initially identified as having potential to be addressed at Southlea, there seems to be little evidence of early medieval activity in the areas under investigation. It is possible that more may be revealed at the trial trenching phase.

4.3.10 **Later Medieval**
Landscape and land use.
The chronology of development and character of field systems and their relationship to settlement across the region needs to be further explored.
The character and organisation of ridge and furrow; field drainage [requires further investigation].The location of fishponds and fisheries; their relation to weirs and mills/ bridges.

4.3.11 Some information on the development of field systems has been derived from preliminary investigations at Southlea Farm. More targeted evaluation is needed to investigate this more fully.

4.4 Results: Geophysical Survey

4.4.1 **Introduction**

Fields 1, 4, 5, 6, 8, 9, 10, and 11 were surveyed, using the methodology outlined in Section 2.4. A full report on the results of this survey was produced by SUMO Services (Gater, 2017c).

Results: Stage 1 Evaluation

4.4.2 The majority of the archaeologically significant responses identified lay within Field 11, forming a substantial complex of distinctive features (Figure 4.2).

4.4.3 The magnetic responses generally fall into four categories: ring ditches (of which there are five, of varying size and completeness); rectilinear enclosures (three main ones and several less distinctive); linear ditches forming a pattern of field systems; and numerous possible pit-like responses (some of which could indicate small-scale fired features such as kilns, ovens and metalworking activity).

4.4.4 There are several trackways, and the field systems extend into Field 10 to the south-east.

4.4.5 The northern limit of the archaeological features appears to be a natural boundary with wet ground along the edge of the gravel island on which most of the features lie.

4.4.6 The pit-like responses have been interpreted as being of possible archaeological interest because there is such a large number; some could simply reflect more deeply buried (modern) ferrous objects.

4.4.7 The form of the features identified suggests an initial interpretation of a multi-period prehistoric site, probably beginning in the Bronze Age and continuing into the Iron Age or Roman period. There is some indication of a shift east over time, with the ring ditches probably representing an early phase, and the rectilinear enclosures being later.

4.4.8 Field 1 contains a distinct arc-shaped response which may be of archaeological interest. However it may link with an adjacent old field boundary to form a D-shaped feature, in which case it may represent a more recent agricultural feature.

4.4.9 A straight band of magnetic responses running through Field 8 could represent a trackway.

4.4.10 There are numerous trends and isolated anomalies in the data in Fields 1, 8, 10 and 11 but they are not as clear as most of the archaeological responses. Although archaeological interpretation cannot be ruled out they are, perhaps, more likely to be agricultural or modern. A few equate with boundaries marked on old mapping and in such instances they are marked on the interpretation plan accordingly.

4.4.11 Amorphous responses in a clear band across the north of Field 11 reflect natural magnetic variations in the soils marking the extent of wet ground.

4.4.12 Two large ferrous anomalies cross through Field 11 and continue through Field 4. These were initially interpreted as representing two large pipes. Subsequent investigation revealed that they actually represent two sides of an extremely large metal-lined pipe running from the Thames Water pumping station situated to the west of Field 4.

4.4.13 Other ferrous responses close to boundaries are due to adjacent fences and gates. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data. These responses are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil and are assigned a modern origin. Only the most prominent of these are highlighted on the interpretation diagram.

Comparison: Datchet Village Society Survey

4.4.14 The Datchet Village Society survey was carried out over a similar area to that of the RTS Stage 1 investigations, though Field 1 was omitted, and Field 7, Field 2, and an additional field east of Field 2 were included.

4.4.15 The results were broadly similar (Figure 4.3). The most extensive collection of archaeological features was identified in Field 11; these included ring ditches, rectilinear enclosures, ditches forming field systems, and a considerable number of pits. The field system is clearly seen to extend into the north-east corner of Field 9 and the north-west corner of Field 10, and more faintly into the northern third of Field 9; the latter was not as clearly seen in the RTS survey due to interference.

4.4.16 Linear anomalies probably corresponding to post-medieval walls or field boundaries were noted in Fields 6, 7, and 8. The anomaly interpreted in the RTS survey as a trackway running north-south across Field 8 also appears in the Village Society survey, continuing across Field 7, but not into Field 11; it was not noted as being of significance in the interpretation of the data.

4.4.17 The most significant difference from the RTS survey results lay in the area in and around Field 2 (which was not surveyed in 2017). This revealed a second area of multi-period settlement, with a series of ring ditches and rectilinear enclosures. Investigation of the largest of these enclosures was carried out by the Society, which showed it to be Late Iron Age/early Roman in date (see Section 3.2.15 above). The results of RTS survey in Field 1 suggest that this settlement does not continue to the north.

4.4.18 It is also notable that the Village Society data does not reveal the major ferrous anomaly running across the north of Field 11, interpreted in the RTS survey as a water tunnel. It is known that the pipe was relined with ferrous material in the late 2000s, in between the two surveys taking place, which explains the difference. The presence of archaeological features in the Village Society survey suggests that these should still survive over the line of the tunnel, which appears to have been constructed by boring into the clay deposits beneath the gravels rather than by excavation, despite being no longer detectable by geomagnetic techniques.

Conclusion

4.4.19 The survey has identified a complex of archaeological features indicative of multi-period prehistoric activity at the site. The results include ring ditches, enclosures, field systems and evidence of settlement activity. There are also several uncertain responses and former field boundaries visible in the data. Elsewhere natural alluvial responses, areas of magnetic disturbance, and a large tunnel were noted. The data corresponds well to that produced by the Datchet Village Society in the late 1990s/early 2000s, with a slight variation in area and results making the two surveys complement each other well.

4.5 Results: Fieldwalking Survey

Introduction

4.5.1 Two forms of field survey were carried out at Southlea Farm: fieldwalking and metal detector survey (Figures 4.4 to 4.6). As described in Section 3.1 above, it was not possible to carry out the full programme of survey initially envisaged for this site, due to constraints of the crop rotation on the farm. Fields 9. 10, and 11 were the only fields available during the 2017 season, and, of these, only Fields 9 and 11 were accessible for long enough to carry out a full survey. None of the fields was accessible for enough time to carry out a full metal detector survey. Instead, metal detecting was used in conjunction with field walking, to aid in detection of surface metal finds only, and finds made with the metal detector were included with those collected during fieldwalking.

4.5.2 The methodology used was as outlined in Section 2.5 above.

Specialist Reports

The Shell: *Alison Wilson*

4.5.3 The bulk of the shell recovered from fieldwalking at Datchet consisted of native oyster shell (*Ostrea edulis*), also known as the European flat oyster; a staple food in Britain since prehistoric times. The only exception to this was one very small fragment of Common periwinkle shell (*Littorina littorea*), a species of small edible whelk.

4.5.4 The shell was fairly evenly distributed across all fields, but in a fragmentary state making further identification difficult. A full catalogue is available in Appendix 1, Section 15.1.

The Ceramic Building Material: *Phil Mills*

4.5.5 **Introduction**

There were 190 fragments of CBM presented for study. Excluding probable fragments of pottery and a CBM fragment that was unlabelled there were 186 fragments weighing 6157g with 2 possible corners noted.

4.5.6 The material was examined by field and transect identification by the given catalogue numbers. Fabrics were examined by a X50 digital microscope and a fabric series was created. Forms were identified as far as possible. Fragment count (No) and weight in grams (Wt) as well as no of extant corners (CNR) were recorded.

Dating

4.5.7 There was a definite Roman tegula flange fragment (21.3) from F11 T21. There was also a probable piece of Roman CBM in the same fabric (1.3) from F10 T1. There were two curved tile fragments which may have possibly been from imbrex from Field 11 (23.1, 31.3 and 37.3) although on fabric grounds these have been recorded as probable pan tiles.

4.5.8 There were a number of peg tiles identified in the assemblage and the majority of the material was typical of flat roof tiles. There was a small group of tiles in a high fired sandy fabric, TZ31.2 which could have an early C14- C16 date. The majority, based on fabric, are likely to have been later and unlikely to have been produced before the late 17th century. There were a couple of likely pan tile fragments (23.1, 35.1 and

37.3 from T11) which would be of C18 or later date. But the possibility that these were imbrex fragments cannot be entirely ruled out as noted above.

4.5.9 There was a wall tile fragment 2.2 from F11 and a drain fragment, 1.9 from F9 and which are likely 19th century or later date.

4.5.10 There was very little brick from the assemblage, fragment 17.15 from F9 and 18.20 from F9 which were both hand made with rounded irregular arrises, likely to be of 15th – 16th century in date, but possibly later.

4.5.11 Two fragments of floor tile on medieval or later date were noted 18.14 from F9 and 18.37 from F9.

Supply

4.5.12 Table 4.4 shows the proportions of the different fabrics noted. The most common were TZ21.31 and TZ21.33 which were very closely related, and likely to represent the extremes of a continuum based on number of inclusions and firing.

4.5.13 Table 4.5 shows the proportion of each fabric present in each field. The Roman fabric T11.3 would appear to be concentrated in F10 and to a lesser extent F11 with the possible earlier medieval fabric TZ21.32 is high in F10 slightly less in F9 and relatively low in F11.

Fabric	No%	Wt%	CNR%
T11.31	1.1%	4.1%	
TZ11.3	1.6%	1.9%	
TZ11.31	1.1%	1.9%	
TZ121	0.5%	0.6%	
TZ21.3	8.6%	7.5%	50.0%
TZ21.31	50.5%	47.8%	
TZ21.32	7.0%	8.7%	50.0%
TZ21.33	28.0%	24.8%	
TZ27.3	0.5%	1.1%	
TZ50	0.5%	0.2%	
TZ80	0.5%	1.6%	
N	***186***	***6157***	***2.00%***

Table 4.2: Fabric proportions

	F9	F10	F11
T11.31		5.0%	1.7%
TZ11.3	2.8%		
TZ11.31	0.9%	5.0%	
TZ121			1.7%
TZ21.3	10.3%		8.3%
TZ21.31	43.9%	50.0%	63.3%
TZ21.32	7.5%	10.0%	5.0%
TZ21.33	32.7%	25.0%	20.0%
TZ27.3	0.9%		
TZ50		5.0%	

	F9	F10	F11
TZ80	0.9%		
N	***107***	***20***	***59***

Table 4.3: Fabric proportions by no by field

Roman Fabrics:

4.5.14 **T11.31**
This is an oxidised fabric with common find sand inclusions. Material in this fabric include an unidentifiable fragment (F10 1.3) and a tegula flange (F11 21.3)

Medieval and Later Fabrics:

4.5.15 **TZ11.3**
This is a red fabric with common coarse sand inclusions. There are very few examples in this fabric – a brick fragment F9 17.15, a floor tile c 28 mm thick F9 T18, 14 and a tile fragment F9 6.6.

4.5.16 **TZ11.31**
This is a brown underfired fabric with common coarse sand inclusions. Examples in this fabric include a floor tile fragment with brown glaze extant on one side F9 18.37 and a tile fragment, T10 4.6.

4.5.17 **TZ21.3**
This is a dark red fabric with common sand and some coarse lime inclusions There is a brick fragment (F9 19.20) in this fabric and 14 tile fragments.

4.5.18 **TZ21.31**
This is a red fabric with common medium sand and some lime inclusions. There are two possible pan tile F11 31.2 and F11 37.3 There are some 5 examples of peg tile, with fragments of a round peg hole and 81 fragments of flat roof tile.

4.5.19 **TZ21.32**
This is a hard fire fabric with dark grey to brown surfaces and a dark brown core with abundant sand and lime inclusions. This is typical of fabrics of 14- 16th century date. Only tile fragments are noted in this fabric.

4.5.20 **TZ21.33**
This is a hard fabric with dark red surfaces and thick black core with common sand and lime inclusions. There is a probable pan tile T11 35.1 two peg tile s fragments, with rounded peg holes and 50 fragments of flat tile.

4.5.21 **TZ27.3**
This is a pale red fabric with shell inclusions. There is a single tile fragment F9 19.6 in this fabric.

4.5.22 **TZ50**
This is a reduced black fabric with quartz inclusions, probably 19th or 20th century in date. There is a single tile fragment F10 11.2.

4.5.23 **TZ80**
This is a yellow fire clay fabric with common black inclusions and thick brown glaze. There is a single drain fragment F9 1.3 in this fabric, C19 or later.

4.5.24 **TZ121**
This is a hard-fired deep red fabric with possible outer slip, likely 20th century or later. There is a fragment of a wall tile with black coating in lower surface F11 2.2

Function

4.5.25 Table 3 shows the proportion of the fabric by field. The number of corners is very low and would suggest secondary deposition of rubble. The assemblage is dominated by tile fragments and there are very few other types noted (e.g. ridge tile) which would be expected if the material was from a nearby structure.

Function	No%	Wt%	Cnr%
B/T	3.2%	1.5%	0.0%
Brick	1.6%	2.2%	0.0%
drain	0.5%	1.6%	0.0%
Floor Tile	1.1%	1.7%	0.0%
Pan Tile	0.5%	0.3%	0.0%
Peg Tile	3.8%	4.2%	0.0%
Tegula	0.5%	3.3%	0.0%
Tile	88.2%	84.7%	100.0%
wall tile	0.5%	0.6%	0.0%
N	***186***	***6157***	***2.0%***

Table 4.4: Functional break down

Discussion

4.5.26 This is a small collection of ceramic Building material. There is a very small Roman presence in the assemblage. This cannot be taken as evidence that there was a roman building near the site, however small quantities of CBM are often found in Roman rural settlements, so the possibility of a minor Roman settlement near F10 should be considered.

4.5.27 There would appear to be some possible 14-16th century material on the site concentrated around F10. The majority of the material, however is late and likely 17th century or later.

4.5.28 The large number of tile fragments, lack of corners and functional diversity all suggest that this material is not directly associated with nearby structure but the result of secondary deposition, for instance via ‘ night soiling’.

4.5.29 Further fabric descriptions and images can be found in Appendix 1, Section 15.2.

Metalwork: *Rosemary Hughes and Alison Wilson*

Quantities

4.5.30 A total of 97 pieces of metal in varying states of preservation were recovered during the fieldwalking of three fields at Datchet. Of these, 22 of the items recovered were nails along with 36 iron alloy finds, 8 copper alloy items, including a possible prehistoric bronze quoit pin, 28 pieces of slag and one pewter item (Table 4.5 below).

	Field 9	Field 10	Field 11	Total
Nails	19	2	0	22
Ferrous	37	2	0	38
Copper Alloy	7	0	1	8
Pewter	1	0	0	1
Slag	22	6		28
Total	86	10	1	97

Table 4.5: Metalwork from Southlea Farm

Field 9: Non Ferrous materials

4.5.31 The copper alloy items consisted of two buckle pieces, two furniture fittings (including a door knob), a Farthing (1928), plate fixture and a plaque carved with the initials HJS, all of post-medieval date. The pewter object, a strip with stamped decoration was tentatively identified as medieval in date.

Field 9: Ferrous materials (nails)

4.5.32 A total of 19 of the 56 pieces of ferrous material were nails, varying in type and ranging in condition from heavily corroded and fragmentary to only slightly corroded. The length of the nails ranged between 30mm to 101mm (from head to tip), and the widths ranged between 5mm and 10mm. 5 of the 20 nails were fragments with no surviving head, while the remaining 15 had both circular and square heads.

Field 9: other ferrous material

4.5.33 A total of 14 of the remaining 37 pieces of ferrous material collected were too degraded to identify and have been listed as fragments. 5 other items were identified as pieces of iron bar (F3.15, F5.23, F9.33, F15.13, and F18.23) and 3 as pieces of metal pipe (F1.15, F2.34 and F6.13). There were also 2 chain links (F7.18), 2 possible latches (F2.62 and F3.4), parts of 2 tools (F5.8 and F9.30), a lynch pin (F6.9) and an iron plate (F4.14).

Field 9: slag

4.5.34 A total of 22 fragments of slag were recovered during the fieldwalking exercise. These were evenly distributed across the area.

Field 10: Ferrous materials (nails)

4.5.35 Two nails were collected from Field 10 in transects 3 and 8. Both have square heads and measure 59-63mm in length, 11-19mm in width and 4-8mm in depth (F8.15).

Field 10 Other Ferrous material

4.5.36 The other two ferrous items collected from Field 10 comprised a lynch pin (F4.15) and a flat plate fragment (F8.10).

Field 10: slag

4.5.37 A total of 6 pieces of slag were recovered from Field 10. As with the slag from Field 9, this material is evenly spread across the field.

Field 11: Copper alloy object: *Quita Mould*

4.5.38 The only piece of metal collected from Field 11 was a single piece of copper alloy. This incomplete circular strip has been interpreted as possibly a piece of a Bronze Age Quoit pin).

4.5.39 The fragment was semi-circular broken from a large circular or ovoid shaped ring or frame. The fragment was fractured at each end and the profile was distorted and slightly sinuous. The ring has a plano-convex section, with the lower face flattened, the inner side and the upper face gently rounded, the upper face tapering to the outer edge giving the section a 'tear-drop' like shape. The broken ends have the same colour and patina as the rest and are not new breaks, suggesting it was broken in antiquity. There was no obvious decoration but very faint, parallel, oblique lines visible at the inner edge may be vestigial file marks. The item was in good condition with light green patination, no corrosion or encrustation was present. The surviving length/external diameter 92mm, internal diameter 76mm, arm width 9mm, max thickness 4.5mm, weight 37g.

4.5.40 This fragment (SF11.3) is difficult to identify with certainty, as so little of the original object remains. The fragment was broken from a large copper alloy ring of circular or oval shape. The plano-convex section suggests it was not broken from a bridle cheek piece or a suspension ring which usually have a round section. It is too large for a medieval drape ring; those from the city of London, both plain rings and those with hooks, being between 18-29mm in diameter (Egan 1998, 62-4).

4.5.41 Similarly, the size makes it unlikely to be broken from an annular buckle, while the shape of the frame makes it unlikely to be broken from a 17th century baldrick buckle (see for example Whitehead 1996, 56 no. 327). It may well be part of the head broken from a quoit-headed pin as suggested by Alison Wilson (TPA); if this is the case, it is a large example. Quoit-headed pins vary widely in both overall size, and the shape and section of the head, and examples with similarly large, plain, heads are known. A large quoit-headed pin was part of the Wylye Hoard found on Deptford Downs in Wiltshire in 2012 and dated to 1400-1350BC (https://finds.org.uk/database/artefacts/record/id/538672). The complete pin (object no 32), from the second deposit/concentration of finds in the hoard, is some 395mm long with a round head 118mx113mm in diameter and weighs 119g. An example recovered from the upper fill of a boundary ditch at Kingsmead Quarry, Horton in Berkshire is larger still (http://www.wessexarch.co.uk/projects/horton2013), while another, found in the parish of Iden, Rother, East Sussex (KENT-2E280D) with a similarly shaped head is roughly half the size. The fragment discussed here (SF11.3) may come from a comparable pin and be of Middle Bronze Age date. Crop marks suggestive of Bronze Age occupation and a possible burial have been identified at Datchet previously (Puzey-Broomhead, 2017b, 17).

4.5.42 **Discussion**

Other than the possible Bronze Age quoit pin, the copper alloy farthing, and the potentially medieval pewter strip, the metal items collected during the fieldwalking exercise at Datchet have little in the way of firm dating evidence. The bulk of the material can be considered to be derived from a typical post medieval domestic assemblage.

Glass: *Rosemary Hughes*

Quantities

4.5.43 A total of 40 pieces of glass were collected during field walking survey. Of these 19 pieces were collected from Field 9, 11 pieces from Field 10, and 10 pieces from Field 11. These pieces were all post medieval or modern in date.

Field 9

4.5.44 19 pieces of glass were collected from Field 9, of which 11 pieces were post medieval green glass bottle fragments, comprising 3 pieces of bottle rim (F6.45, F3.17, and F16.24), 3 pieces of base (F5.1, F6.38, and F19.12) and 5 pieces of body (F1.10, F16.11, F17.6, F17.21, and F6.27). There were also 8 pieces of light blue and pale green glass; 2 pale green glass bottle stoppers (F6.35 and F1.25), 1 piece of pale green body fragment (F6.35), 1 pale green base (F13.8) and a possible Codd bottle (F6.44), a pale green lid (F14.32), pale blue bottle neck (F18.28) and a Blue glass base (F9.13).

Field 10

4.5.45 A total of 11 fragments of glass were recovered from field 10, including fragments of pink, blue, pale green, and green glass. There were 6 pieces of green glass bottle: 2 pieces of base (F9.5 and F3.14), 1 bottle neck (F4.18), 1 piece of body (F8.5). The remaining 2 pieces of bottle glass consisted of a green fragment with a branch and leaf design on it (F7.18) and a fragment of a green bottle glass with a partial inscription on it, the letters L and O (F8.5).

4.5.46 The assemblage also included a single body fragment from a vessel made of pink glass (F7.9) and a single fragment of pale blue glass (F4.7). Three fragments of pale green glass were also recovered, all body fragments (F4.12, F6.6, and F4.11), two with partial inscriptions on them identifiable as Codd bottles.

Field 11

4.5.47 A total of 10 fragments of glass were recovered from field 11, including green, pale blue and clear glass. The three pieces of green glass were all fragments of bottle glass (F14.2, F25.1, and F27.5). The assemblage also contained 3 pieces of clear glass, one neck (F29.4) and one body fragment (F26.4 and one abraded fragment. The remaining 4 pieces comprised one pale green glass lid (F38.3), one pale blue glass bottle stopper (F29.6); and one pale blue glass base (F28.3).

Discussion

4.5.48 The glass recovered during the fieldwalking exercise at Datchet, Berkshire is a typical post medieval -modern domestic assemblage.

The clay tobacco pipe assemblage: *Alison Wilson*

4.5.49 A total OF 52 fragments of clay tobacco pipe were collected from Southlea Farm, Datchet. The majority of the pipe fragments found were lengths of stem. In the absence of any identifiable maker stamps, these have been dated using bore hole diameter. Early pipes have a bore diameter of 3mm, decreasing over time until stems by the middle of the 18th century had a bore of less than 2mm. All fragments are of a 17th - 19th century date. A full catalogue is available in Appendix 1 (Section 15.3).

17th century

4.5.50 The oldest clay pipe fragments in the assemblage date to the 17th century. The majority of the fragments are pieces of unmarked stem with a 3mm borehole diameter, with just one fragment providing a diagnostic feature; a stem fragment from Field 9, transect 4 (4.17) which has a remaining pedestal foot dating it loosely to the early to mid 17th century.

18th and 19th century

4.5.51 The bulk of the pipe stems had a bore hole diameter of 1.5mm - 2mm, placing them in the 18th - 19th centuries. Only one diagnostic fragment was recovered from Field 9 transect 19; a fragment of pipe stem with a 1.5mm bore hole diameter, bearing the stamp NORWOOD on one side of the stem and ETON on the other. The earliest Norwood producing pipes in Eton was William Norwood in 1797, with Richard Norwood manufacturing between 1839 and 1903 and Mary and Anne Norwood between 1847 and 1877. Without more information it is not possible to determine which Norwood the stem fragment was produced by, but the 1.5mm borehole diameter would suggest that it is of a later date in the 19th century.

20th century

4.5.52 Clay pipes were manufactured in small quantity up until the First World War. However there is nothing to indicate pipes from this period in this assemblage.

Pottery: *Paul Blinkhorn*

4.5.53 The bulk of the pottery was of post-medieval or modern date. Of the older material, the range of fabric types is fairly typical of sites in the region, and indicates that there was activity at the site in the prehistoric, Romano-British and medieval periods. Some of the sherds are fairly large and fresh, indicating that they have only recently been disturbed. A full catalogue can be found in Appendix 1, Section 15.4

4.5.54 As no formal pottery type-series exists for Berkshire, where possible, the pottery was recorded using the conventions of the Museum of London Type-Series (eg. Vince 1985), as follows:

BLUE:	Blue Stoneware, 1800-1900.
BORDY:	Yellow-glazed Border Ware, 1550-1700.
BORDG:	Green-Glazed Border Ware, 1550-1700
CBW:	Coarse Border Ware, 1270 – 1500.
CHPO:	Chinese Porcelain, 1580 -1900.
DERBS:	Derby Stoneware, 1700-1900.
EMIS:	Early Surrey Iron-rich Sandy Ware, 1050-1150.
EMSH:	Early Medieval Shelly Ware, 1050-1150.
ENGS:	English Stoneware, 1700-1900.
ENPO:	English Porcelain, 1745-1900.
ESUR:	Early Surrey Ware, 1050 – 1150.
FREC:	Frechen Stoneware, 1550 – 1700.
HORT:	Horticultural Earthenwares, 19^{th} – 20^{th} century
KING:	Kingston-type Ware, 1230–1400.
LMSR:	Late Medieval Sandy Transitional Redware, 1480-1600.
MPUR:	Midland Purple Ware, 1480 - 1750
PMBL:	Post-medieval Black-glazed Redware, 1600 - 1900
PMR:	Post-medieval Redware, 1580 – 1900.
PMR SLIP:	London Area Slipped Redware, 1800-1900.
RAER:	Raeren Stoneware, 1480 - 1610
REFW:	Refined Whiteware, 1800-1900
SSW:	Sandy-Shelly Ware, 1140 – 1200
STMO:	Staffordshire-type Mottled Ware, 1680-1800
SWSG:	Staffordshire White Salt-Glazed Stoneware, 1720-1780.
TPW:	Transfer-printed Whiteware, 1830-1900.

The following were also noted:

LBA**:**	Flint-tempered, late Bronze Age – Early Iron Age
LPRIA:	“Belgic” Wares, 50BC – AD50
MIA:	Sandy-shelly Ware, mid – late Iron Age
RB:	All Romano-British.

4.5.55 The low instances of prehistoric and Roman pot in all three fields does not allow for detailed discussion of the distribution (Figure 4.4). It is likely that the lack of earlier material in Field 11 is due to the intensive nature of the fieldwalking carried out previously (see below). There is a loose cluster of prehistoric material in the northern ends of Fields 10 and 9 but as the southern ends of these fields are closer to the river this is to be expected, mainly due to the fact that overlying alluvial layers are likely to be thicker and therefore provide greater protection for any features which are more deeply buried. It is also likely that the density of cut features in this area will be lower due to the area being less favourable for certain types of settlement activity such as dwellings, due to the area being prone to flooding.

4.5.56 The blanket coverage of all fields by later material can be seen as evidence of 'manuring' rather than representing discrete areas of activity.

Flint: *Peter Webb*

4.5.57 The lithic assemblage was composed of 145 pieces weighing a total of 1246g, collected from the three fields. Previous fieldwalking and survey of the site indicates Mesolithic to post-medieval activity, the assemblage reflected in this report indicates largely Neolithic and Bronze Age activity. A full catalogue can be found in Appendix 1, Section 15.5.

4.5.58 The artefacts were studied individually and quantified by number and weight of piece types. In order to assess the nature of the assemblage the lithics were examined under a 20x magnification hand-lens for signs of retouch and indications of use-wear in order to allow them to be subdivided by type category based on tool form, presence of retouch and use-wear. Complete cores were classified based on Clark's 1960 typology with the addition of removal type. Measurements of each artefact were taken to ascertain the original form of blank, based on the length:breadth ratio (squat flakes <1:1; flakes ≥1:1 - <1.5:1; long flakes ≥1.5:1 - <2:1; blades ≥2:1) using digital vernier calipers rounded to 0.1mm accuracy as a guide to the possible period of production. Length measurements were taken at the maximum distance between two points along the bulbar axis at right angles to the bulbar platform. Where this could not be identified, the measurement was taken following the percussion ripples. Width measurements were taken at the maximum distance between two points perpendicular to the length. Thickness measurements were taken at the maximum distance between points on the ventral and dorsal surfaces. Where artefacts were incomplete, measurement data was deemed not suitable for analysis, though all measurements were recorded. All artefacts were weighed on digital scales and rounded to 0.1g accuracy. Colour comparisons were made using the Munsell Rock Colour Book (2013) based on the dominant hue of the material, excluding the cortex, patination or burning discolouration to ascertain if there was a preferred colour for particular tool types. The nature of the cortex (whether rolled or not) was used to establish whether the material was from a nodule or river gravel source. The amount and nature of the cortex was also measured to establish the presence of primary, secondary and tertiary flaking waste. The presence of burning was also noted (Figure 4.5).

Raw materials

4.5.59 The assemblage was made up of 140 pieces of flint (1212.7g), and five pieces of chert (33.2g). The flint represents both gravel (46 pieces, 32%) and nodule (53 pieces, 36%) sources, with a number from an undetermined source (41 pieces, 28%). The chert is represented only by gravel sources. Of this material, one piece (1%) is an un-worked natural piece of gravel. The gravel material is likely to be derived from local gravels which are a common component of the coarse-grained sands of the local underlying geology of the Thames Valley basin; the remainder from nodule deposits, likely to be located within nearby chalk bedrock or clay-with-flint geologies. The colour of the material recovered is relatively homogenous, the nodule sources pieces dominated by various shades of grey and black; and the gravel-sourced pieces were predominantly shades of brown; the chert contained a more mixed combination of hues.

Composition and technology

4.5.60 The assemblage shows evidence of a complex approach to lithic production, with examples of intensive controlled reduction using both hard and soft hammers; pressure flaking; and casual expedient working. This has resulted in a range of tool types, including: fully retouched; partially retouched; and utilised non-retouched tools (see below), and is perhaps a reflection of the mixed quality of the material available.

Piece form	Count	%
Blade	15	10%
Flake	57	40%
Long flake	30	21%
Squat flake	42	29%
Grand Total	**144**	**100%**

Table 4.6: Piece form (not including objective pieces

4.5.61 The dominance of flakes (90%) over blade forms in the assemblage suggests that there was a preference in their production, though blades are present; and this mix of both blades and flakes (Table 4.6) suggests the possibility of there being a combination of Mesolithic, Neolithic and Bronze Age production(see below), the latter two periods being more dominant in the assemblage.

4.5.62 The production stages present (Table 4.7), indicated by the amount of cortex and size of the debitage, include only a small amount of primary initial core reduction (1%), with limited early stages of secondary reduction (6%). The assemblage is heavily weighted towards the final stages of tool production and refinement with 49% tertiary and 44% non-cortical pieces.

Production stage	Count	%
Non-cortical	63	44%
Primary	1	1%
Secondary	9	6%
Tertiary	71	49%
Grand Total	**144**	**100%**

Table 4.7: Production stage

4.5.63 Further to the general production stage, the assemblage contains piece types reflecting all stages of production, including waste such as debitage and exhausted objective pieces, along with utilised and retouched tools (Table 4,8). There is a slight dominance of retouched tools over debitage (51% and 32% respectively), and a relatively high proportion of objective pieces (10%), all further adding to the picture of the final stages of tool production being carried out.

Piece stage	Count	%
Debitage	46	32%
Objective piece	15	10%
Retouched tool	73	51%
Utilised tool	10	7%
Grand Total	**144**	**100%**

Table 4.8: Piece stage

Objects

4.5.64 A total of 15 objects were recovered during the fieldwalking. This represents an unusually high number given that there are only 46 pieces of debitage, 73 retouched tools and 10 utilised tools (Table 4.8), which would represent only 8 removals per core, each core producing nearly 5 retouched tools. This may be tempered by the small size of the material (81% of the pieces weight less than 10g, 77% are under 35mm long, 92% less than 35mm wide), suggesting that the majority of the source material was small, and would only be capable of producing a limited number of small flakes. This does not, however, account for the number of flakes that should be present based on the total number of flake scars visible on all of the pieces.

4.5.65 The objective pieces themselves were all produced from flint material, predominantly from nodule sources (only single examples of the Class D and Class E keeled cored are from likely gravel sources). The relatively low mean weight (36.8g) is reflected in the small size of the cores at the point of discard and, despite the suspected small nature of the source material, indicates a relatively high intensity with which the material was worked, and perhaps suggests a need for economic use of materials. This is further indicated by the presence of four flaked pieces. The cores show evidence of systematic single and multi-platform reduction, and form six distinct types based on Clark's 1960 classification (Table 4.9).

Core type	Count	%
Class B1 blade & flake	1	7%
Class B2 blade & flake	1	7%
Class B2 blade	1	7%
Class B3 blade & flake	1	7%
Class C blade & flake	1	7%
Class C flake	2	13%
Class D keeled	2	13%
Class E keeled	1	7%
Flaked piece	4	27%
Discoid	1	7%
Grand Total	**15**	**100%**

Table 4.9: Objective piece types (based on Clark 1960 typology)

4.5.66 There appears to be no favoured strategy for core reduction, each class providing between two and four examples, and sub-classes predominantly only single pieces. This may indicate multiple episodes and periods of working in creating the assemblage, though is more likely a result of practical use of the material, especially given the mix of blade and flake removals. This mix suggests Early Neolithic activity, though the presence of keeled cores may indicate that this extended into the later Neolithic.

4.5.67 The range in size of the complete cores is relatively restricted, the range between minimum and maximum sizes being less than 64mm. This, along with the small size of the pieces (only two cores are larger than 50mm in any direction) is likely to be a result of the combination of the small size of the source material and it being used to exhaustion.

Debitage

4.5.68 The debitage comprises a total of 46 pieces, composed of: blade fragments, chips, core rejuvenation flakes, flakes, and shatter fragments (Table 4.10). The relative absence of primary and secondary removals(7 pieces) indicates that the initial stages of core reduction occurred elsewhere, perhaps at the point of extraction as a means of weight reduction, the cores present here being brought already partially used. The remaining pieces are tertiary (18), or non-cortical (21) further indicating that it was primarily the final stages of tool production and maintenance that were occurring on the site. This is supported by the small size of the pieces of debitage, none being above 50mm, the majority below 30mm, and indicates that they represent removals from near exhausted cores, or from the tools themselves; suggested by the presence of chips which may represent the final retouch of tool edges.

Debitage type	**Count**	**%**
Blade fragment	3	7%
Chip	2	4%
Core rejuvenation flake	2	4%
Flake	36	78%
Shatter fragment	2	4%
Shatter fragment?	1	2%
Grand Total	**46**	**100%**

Table 4.10: Debitage

4.5.69 The combination of both blades and flakes, dominated by the latter, indicates that the assemblage could reflect Early Neolithic activity, though the presence of squat flakes (18 pieces) suggests that the activity extended into the later Neolithic and/or Bronze Age.

Retouched tools

4.5.70 A total of 73 retouched tools were recovered during the fieldwalking. Only a small number of these tools show invasive retouch, the majority demonstrating only marginal working, commonly of a very crude and partial nature, and indicating earlier activity and expedient working.

4.5.71 The retouched tool assemblage (Table 4.11) is composed of: 5 backed blades; 1 possible denticulate; 23 edge retouched pieces; 2 knives; 2 miscellaneous retouched pieces; 6 multiple tools (1 concave end scraper & backed blade; 1 concave end scraper, piercer & knife; 1 end-scraper & knife; 1 end-scraper & notched knife; 1 end-scraper & piercer; and 1 nosed scraper, piercer & backed blade);16 notched blades/flakes; 5 piercers; and 13 scrapers (1 discoid; 2 double-notched side; 3 end;3 end/nosed; 2 notched side; 1 side; and 1 side-nosed).

Retouched tool type	Count	%
Backed blade/flake	5	7%
Denticulate?	1	1%
Edge retouched pieces	23	32%
Knife	2	3%
Miscellaneous retouched	2	3%
Multiple tool	6	8%
Notched pieces	16	22%
Piercer	5	7%
Scraper	13	18%
Grand Total	**73**	**100%**

Table 4.11: Retouched tools

Backed blades/flakes

4.5.72 A total of five backed blades/flakes were recovered during the fieldwalking, (F3.28; F.3.6; F7.4; F10.43; and F15.11). The majority were produced on flint derived from possible nodule sources, only F7.4 being produced on chert. Backed pieces were likely to have been used as knives, the backing allowing the piece to be held; and were commonly used throughout prehistory as a relatively expedient tool type.

Denticulates

4.5.73 A single possible crude denticulate (F3.35) was recovered from the site, produced on probable gravel flint. Denticulates were used as saw-like tools throughout prehistory.

Edge-retouched pieces

4.5.74 By far the largest category of retouched tools are the edge-retouched pieces, comprising a total of 23 pieces, including: one edge-trimmed flake (F12.1); four retouched blades (F10.1; F12.16; F12.20; F14.25) and 18 retouched flakes (F2.1(1); F2.3; F2.7; F2.17; F2.31; F4.2; F4.17; F4.34; F6.30; F6.31; F7.7; F9.34; F10.15(1); F10.31; F12.31; F13.10; F18.30; F19.23). They were all produced on flint from a mix of both nodule and gravel sources. Similar to the backed pieces they were used throughout prehistory as relatively expedient cutting tools on all site types, the retouch extending their use-life.

Knives

4.5.75 Two knives were recovered during the fieldwalking (F10.16; F11.1), and both were produced on flint derived from an unclear source. Both show inverse retouch, F11.1 of an invasive nature, identifying them as more carefully produced tools, though their crude nature still suggests that they were probably not much more than expedient tools of a type used throughout prehistory, being discarded once they broke.

Miscellaneous retouch

4.5.76 The assemblage included two pieces which show miscellaneous retouch (F3.3; F7.12). F3.3 was produced on gravel flint; F7.12 flint from an unclear source. Both are likely to be tools of a more defined category, but the partial nature of the retouch and fact that they are incomplete pieces makes it difficult to identify the function of these tools. The retouch on both pieces is abrupt and suggests that they were both backed pieces, the retouch blunting the edges for hafting or holding; and it may be that the broken part of the pieces would identify the tool typology.

Multiple tools

4.5.77 Six multiple tools were recovered, each forming a distinct category (F5.1, end-scraper & notched knife; F10.13, concave end-scraper & backed blade; F10.19, concave end-scraper, piercer & knife; F10.47, end-scraper & piercer; F11.43, nosed scraper, piercer & backed blade; F17.5, end-scraper & knife), though all including a variety of scraper. F10.13 and F10.19 were produced on chert from a gravel source, the remaining pieces on flint from an unclear sources. The combination of tools on a single piece suggests a need to preserve source material, and perhaps indicates limited access to resources; the dominance of scrapers indicating domestic activity, possibly hide preparation. Multiple tools were used from the Neolithic period into the early Bronze Age, though were most common in the later Neolithic. The crude quality of the pieces also indicates that they were produced as expedient tools.

Notched pieces

4.5.78 The second largest category of tool within the assemblage were notched pieces, totalling 16 tools (F2.45; F3.18; F3.26; F4.24; F4.31; F6.23; F7.13; F9.37; F10.1; F10.24; F10.26; F11.14; F11.16; F12.15; F12.39; F13.31). Of these, only F10.24 was produced on gravel chert, the remainder being produced on flint from largely gravel or unclear sources. The function of notched pieces is not entirely clear, and whilst it they may represent rough-outs for microliths (Butler 2012), this is only likely to be the case when produced on blades with notches on the lateral edges. The majority of notched pieces in this assemblage were produced on flakes, and particularly squat flakes (only F6.23 was produced on a blade), making it unlikely that they were to be formed into microliths. They are potentially Neolithic or Bronze Age in date, possibly used as scrapers, the notch defining the width and curvature of the material being worked; or the notch used to facilitate hafting and may indicate another tool type entirely.

Piercers

4.5.79 A total of five piercers were recovered (F2.51; F7.2; F10.15(2); F11.32; F13.30), produced largely on gravel flint. The relatively crude nature of all of the pieces suggests not only that they were produced as expedient tools, but also that they are likely to be Neolithic in origin, their smaller size perhaps indicating towards the beginning of the period.

Scrapers

4.5.80 Thirteen scrapers were recovered during the fieldwalking: one discoid (F14.17); one double-notched end-scraper (F14.23); one double-notched side-scraper (F18.4); three end-scrapers (F9.5; F8.16; F19.2); three end/nosed-scrapers (F6.14; F6.47; F7.6); two notched side-scrapers (F17.20; F24.1); one side-scraper (F11.11); and one side nosed-scraper (F16.19). They were all produced on flint, from a mix of gravel and nodule sources. Scrapers were used throughout prehistory, though notched-scrapers were more common in the Late Neolithic and Bronze Age; and were utilised for a range of functions, most notably hide preparation, and suggest domestic activities at a settlement site.

Utilised tools

4.5.81 A total of ten of the non-retouched pieces recovered during the fieldwalking show possible signs of utilisation. They were all produced on flint derived from mixed gravel and nodule sources. They show evidence of having been produced on both blades and flakes of varying sizes and show no signs of deliberate choice other than having a sharp edge, and are likely to have been used as expedient cutting tools.

Discussion

4.5.82 The material recovered suggests that only the later stages of lithic chipped stone tool production were carried out at the site, with initial core selection, testing and preparation carried out elsewhere, though not necessarily far away. The small size of the debitage indicates that it was predominantly the final stages of production, particularly tool finishing and maintenance that was carried out.

4.5.83 Of the pieces that could be identified to their source material, these show a mix of both gravel, likely derived from locally available sand and gravel of the underlying geology and watercourses; and nodule sources likely derived from nearby Clay-with-Flint deposits.

4.5.84 The majority of the assemblage is non-diagnostic, being composed of debitage and tool types utilised throughout prehistory. However, the combination of tool types, particularly the presence of notched- and nosed-scrapers indicates broadly later Neolithic or Bronze Age activity, though the small size of the piercers may suggest Early Neolithic, or possibly even Mesolithic activity. As a group the assemblage appears to suggest a broadly multi-period site, perhaps dating from as early as the Mesolithic, but largely to the Early Neolithic (mixed blade and flakes; small piercers); Late Neolithic; and Bronze Age (squat flakes; notched-scrapers).

4.5.85 The quantity of material recovered is not indicative of long-term continued settlement, but rather of short-term activity; supported by the relatively narrow range of formal tools, dominance of expedient and crudely produced tools, and their high proportion relative to debitage. The dominance of notched pieces and scrapers, alongside piercers and cutting tools indicates that domestic activity took place. It is likely, therefore that the site represents a short- to mid-term occupation site where only necessary tool production, clothing repairs, and cutting tasks were carried out.

4.5.86 The assemblage was collected from unstratified surface contexts as part of an episode of fieldwalking spread across three fields (9, 10 and 11). The majority of the items being recovered from Field 9 indicating that the bulk of activity represented by the assemblage was carried out in this area. However, distribution plots do not show clear concentrations of artefacts, and the finds do not reflect obvious loci of settlement. This is likely to be a result of Fields 9 and 10 being situated on the periphery of settlement and activity (including Bronze Age funerary monuments and field systems; and Iron Age and Romano-British settlement) previously identified by geophysical survey in Field 11; the distinct paucity of recovered artefacts from within Field 11 explained by previous episodes of field-walking which recovered thousands of artefacts dating from the Neolithic period onwards (Kennish & Martin 2008).

4.5.87 The chipped stone tool assemblage indicates that there was Mesolithic to Bronze Age activity at Datchet. This is not surprising given its location close to a water source, but also given the wider landscape use during prehistory. Evidence for prehistoric activity in Berkshire, and in particular along the Thames Valley, is fairly comprehensive. Stray finds, often interpreted as ritual deposits, have long been recovered from within the Thames; whilst aerial photographs and excavation have identified evidence of occupation and activity along the valley, including multi-period settlement sites. Such sites, containing evidence of Neolithic and Bronze Age occupation have been identified at Dorney, Egham and Runnymede, as well as at Datchet to the immediate north and west of the site (Kennish & Martin 2008). It is likely that these settlements formed part of a wider pattern of household groups settled along the river, making use of its resources.

Comparison: Datchet Village Society Survey

4.5.88 The Datchet Village Society carried out fieldwalking in Field 11, and in the northern-eastern corner of Field 9, during the late 1990s and early 2000s. The methodology used differed slightly from that used in the RTS survey; the fields were walked along 10m transects, but finds were recorded by 10m stint, rather than being individually located. The distribution of the material recovered is therefore presented in a slightly different way, with artefacts plotted by square rather than individually. Greater concentrations are represented by large or smaller symbols (Figures 4.6).

4.5.89 Field 11 was surveyed over three years; each spring prior to sowing, and each autumn following harvest. Over this period, over 4000 sherds of pottery and several thousand pieces of worked flint were recovered, along with smaller quantities of metalwork, tile, bone, worked flint, and quern stone.

4.5.90 In comparison with the RTS Stage 1 survey, the most immediately notable difference is the very much greater quantity of material recovered by the Village Society from Field 11. This is perhaps unsurprising, given the very extensive attention paid to this field and the repeated visits. It seems likely that the bulk of material present within the ploughsoil was removed from the field prior to RTS survey taking place. The possibility of differential recovery explaining this discrepancy is diminished given that members of the Datchet Village Society who had taken part in the earlier survey joined TPA staff members in fieldwalking during the RTS evaluation, and did not recover material at a significantly greater or lesser rate than other members of the field team.

4.5.91 It is notable in this context that the crop on the field during the three years of Village Society survey was maize, which according to Nigel Berryman - the farmer - requires deeper ploughing than any other crop sown in this field. It therefore seems likely that the shallower ploughing carried out in subsequent years has brought fewer artefacts to the surface. The finds recovered in Field 11 by the RTS survey are likely to be largely derived from material already present in the ploughsoil at the time of the Village Society survey.

4.5.92 The far greater quantities of material recovered by the Village Society allowed for a more comprehensive spatial analysis to be carried out. Pottery of different periods was plotted on distribution maps, and the results compared.

4.5.93 The north-eastern corner of Field 9 was walked in the winter of 2002, following harvesting of a maize crop. A total of 647 pot sherds were recovered, along with quantities of worked and burnt flint, and some metalwork. As less than three complete grid squares were walked in this field, spatial analysis was not carried out on the distribution of finds.

4.5.94 The bulk of the pottery was of Late Iron Age/early Roman date, with earlier prehistoric, medieval and post-medieval material also represented. This corresponds to the spatial patterning observed in Field 11, where the distribution of Late Iron Age/early Roman pottery was concentrated over the area of enclosures in the eastern half of the field (directly north of Field 9).

4.5.95 The flint was categorised as either tools or debitage, with the debitage spread evenly across the entirety of Field 11. There was discrete clustering of tools in the centre of the field but any direct comparison with the RTS distributions is not possible due to the low numbers of lithics recovered from Field 11. The pottery distributions from the Society survey demonstrated more discrete clustering, particularly of Bronze Age material. This cluster in the central southern part of the field mirrors the cluster of prehistoric material in the northern parts of Field 9 and 10 recorded in the RTS survey. It is interesting to note that these clusters lie within the field system recorded in the magnetometer survey (Figures 4.2 and 4.6).

Conclusions

4.5.96 The RTS and Datchet Village Society fieldwalking together with the geophysical surveys demonstrate the presence of significant settlement and associated activity from at least the Late Neolithic to the Roman period.

4.5.97 The RTS survey demonstrates a lower instance of artefacts in Fields 9 and 10 which is in all probability representative of a lack of intensive settlement in close proximity to the river. It is however possible that alluvial deposits in this area mask any surviving archaeology; the presence of well-preserved features little disturbed by modern activities in this part of the site should not be ruled out.

4.5.98 The intensive nature of the fieldwalking carried out in Field 11 prior to the RTS survey, coupled with slightly shallow ploughing in the intervening years, almost certainly accounts for the low instances of prehistoric and Roman material recovered during the RTS evaluation. Consequently, the distributions of material plotted from the RTS survey are not in and of themselves that informative. This is mitigated by the Datchet Society results, which show a clustering of Bronze Age and Iron Age material within the central southern area of Field 11, and across the northern parts of Fields 9 and 10, followed by a concentration of Roman material to the east of Field 11, suggesting a shift in the locus of settlement to the east in the Late Iron Age/Roman period.

4.5.99 Both the RTS and Datchet Society surveys show medieval and later material evenly distributed across the fields, suggesting that this material is derived from agricultural practices rather than settlement.

4.5.100 The assemblages recovered during the RTS survey provide valuable information about the nature of activity at the site. In particular, the lithic assemblage suggests earlier activity at the site than might be expected from the ceramic assemblage. Evidence for short-lived domestic activities, such as skin processing, that required cutting tools suggest the area was being exploited from at least the Late Neolithic if not earlier. These subtleties are important for understanding the nature of early human activity which often leaves little tangible trace.

4.6 Results: Geoarchaeological Survey *Tom Keyworth and Andy Howard*

Topographic and Geological Background

4.6.1 The site of Southlea Farm (centred on SU 9912 7608) is located on the inside bend of a large contemporary meander of the River Thames approximately 10.8km south-southeast of Datchet. Topographically, the site comprises an impressive ridge of Late Pleistocene Thames terrace gravel (Shepperton Gravel Member) surrounded by a rather narrow corridor of contemporary floodplain formed by postglacial (Holocene) fluvial activity (Figure 4.7). Current land-use comprises a mixture of arable and pastoral farming.

EM survey methodology

4.6.2 In advance of the boreholes an Electromagnetic (EM) survey was carried out at Southlea Farm across Fields 06, 08, 09, 10, and 11. The EM survey measures electrical resistance (conductivity) through sediments, which are affected by groundwater conditions and geological textural variations. The EM survey therefore can provide information on the character of buried sediments and landform features such as palaeochannels, gravel islands and terrace edges. By relating conductivity to the sediment types recorded during the borehole survey, it is possible to ground truth the results of the EM survey.

4.6.3 Areas of low conductivity are indicative of freely draining material such as sands and gravels, whereas areas of high conductivity are indicative of fine-grained, poorly draining, often waterlogged sediments, for example, clays, silts and organic-rich units. In the processed data plots, areas of high conductivity are depicted in blue and areas of low conductivity in red; for ease of interpretation, the images are zoned into areas of high, moderate, and low conductivity.

Window sample methodology

4.6.4 The window sample survey identified various lithologies and relative depths of Holocene deposits (alluvium) overlying late Pleistocene sands and gravels. These records provide an approximation of the character of the sedimentary deposits and the potential for elucidating records of human activity as well as providing information that will inform subsequent stages of archaeological evaluation fieldwork such as trial trenching (see Deposit Models below).

4.6.5 In total, twenty-two window-sample boreholes were sunk at Southlea Farm. The boreholes were spaced 50m apart and every effort was made to provide an even coverage across the sites, though not all fields were accessible for drilling because of crop restrictions.

4.6.6 Eleven fields were initially identified at for proposed geoarchaeological investigation: Fields 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11. Due to later modifications to the programme (discussed in Section 4.3 above) survey was carried out in Fields 6, 8, 9, and 10.

Field 6

4.6.7 Field 6 was located to the northwest side of Southlea Farm. The ground surface was undulating pasture utilised for grazing, sloping very gently from southwest to northeast. A total of five boreholes were drilled here: DAT WS 05, 06, 07, 08, and 10.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
DATWS05	498971.200	176278.738	17.31	4.00	13.31
DATWS06	498948.271	176208.167	17.63	2.00	15.63
DATWS07	498915.811	176103.020	18.36	4.00	14.36
DATWS08	498991.856	176184.602	17.64	4.00	13.64
DATWS10	499011.957	176064.639	18.22	4.00	14.22

Table 4.12: Location and depth of window samples recorded in Field 6, Southlea Farm

Field 8

4.6.8 Field 8 was located in the southwest corner of Southlea Farm. The ground surface was gently undulating pasture. A total of three boreholes were drilled: DAT WS 16, 23, and 24.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
DATWS16	499044.632	175841.199	17.59	3.00	14.59

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
DATWS23	499172.847	175909.776	17.30	3.00	14.30
DATWS24	499142.073	175811.120	17.48	3.00	14.48

Table 4.13: Location and depth of window samples recorded in Field 08, Southlea Farm

Field 9

4.6.9 Field 9 was located in the central southern part of Southlea Farm. The ground surface was recently harvested wheat stubble gradually sloping from generally north to south. Seven boreholes were drilled: DAT WS 21, 22, 25, 28, 29, 30, and 31.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
DATWS21	499232.624	176101.591	18.61	2.00	16.61
DATWS22	499203.164	176005.231	17.74	3.00	14.74
DATWS25	499283.560	176084.168	17.98	2.00	15.98
DATWS28	499336.548	176066.376	17.64	2.00	15.64
DATWS29	499306.277	175970.867	17.40	2.00	15.40
DATWS30	499276.333	175876.469	17.34	2.00	15.34
DATWS31	499246.812	175780.962	17.52	2.00	15.52

Table 4.14: Location and depth of window samples recorded in Field 09, Southlea Farm.

Field 10

4.6.10 Field 10 was located in the southeast corner of Southlea Farm. The ground surface was recently harvested wheat stubble gradually sloping from northwest to southeast. Seven boreholes were drilled: DATWS 27, 32, 33, 34, 35, 36, and 37.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
DATWS 27	499366.062	176154.035	18.40	2.00	16.40
DATWS32	499399.406	176053.657	17.54	1.00	16.54
DATWS33	499449.215	176043.113	17.32	2.00	15.32
DATWS34	499418.969	175947.619	17.24	2.00	15.24
DATWS35	499509.993	176036.954	17.08	2.00	15.08
DATWS36	499575.016	176026.124	17.23	1.00	16.23
DATWS37	499608.802	176084.665	17.14	2.00	15.14

Table 4.15: Location and depth of window samples recorded in Field 10, Southlea Farm.

Results: EM Survey

4.6.11 At Southlea Farm, areas of low conductivity were located centrally, across the southern extent of Field 6 and Field 11, the north-east area of Field 9, the south of Field 8, and the east of Field 10. Moderate areas largely lay in between the areas of high conductivity in the south and west of the site. Low areas were restricted to the north of the site and in the south of Field 6, although this is suggested to represent artificial interference from modern services (Figures 4.8 and 4.9).

4.6.12 By correlating electrical conductivity zones with sediment type and in turn superficial geology and geomorphology (e.g. low conductivity indicates gravel terraces or islands), it is possible to create a landform assemblage map for the contemporary ground surface and subsurface, which in turn can aid the understanding of archaeological potential of the valley floor and issues of archaeological visibility (Figures 4.10 and 4.11).

Results: Stratigraphy

4.6.13 The stratigraphy recorded in the boreholes from the north-west of the site (DATWS 05, 06, 08, 07, and 10) illustrate a tripartite sequence of alluvial deposits comprising: silt clay topsoil and subsoil underlain by silt clay, 1.90-3.60m in thickness, in turn resting on Shepperton Gravels at depths of 2.70-3.90m BGL. The silt clays are interpreted as the result of overbank flooding by the postglacial river aggrading across the Late Pleistocene landsurface, which is denoted by the upper surface of the Shepperton Gravels (Figure 4.12). The majority of the fine-grained alluvial material is minerogenic in character, with one isolated unit including significant organic remains (WS05) (Figures 4.13 and 4.14). The deposits in the north-eastern corner of Field 6 (WS05) most probably relate to a palaeochannel and samples were recovered for absolute dating and plant macrofossil assessment (Sections 4.6.165 and 4.6.16 below).

4.6.14 To the south, the stratigraphy comprises two broad units: Shepperton Gravel, at depths of 0.70-2.00m BGL, with an upper element of fine sand (tentatively interpreted as aeolian in origin); was overlain by 0.30-1.55m of clay silt alluvium with a well-developed topsoil/ploughsoil. The majority of the fine-grained alluvium was minerogenic in character, although a depression in the gravel surface at WS 28 did record organic deposits (Figure 4.15). These may represent a smaller tributary channel or a low lying area within the floodplain wetland.

Results: Samples

4.6.15 During window sampling deposits with palaeoenvironmental potential were recorded from a single borehole at Southlea Farm. A series of grab samples were taken from this borehole in order to inform the rangefinder dating programme.

Window Sample	Sample Depth (m BGL)	Sample ID	Field
DATWS05	1.40	53	06
DATWS05	1.50	54	06
DATWS05	1.60	56	06
DATWS05	1.70	57	06
DATWS05	1.80	59	06
DATWS05	1.90	61	06
DATWS05	2.20	64	06
DATWS05	2.30	66	06
DATWS05	2.40	68	06
DATWS05	2.50	70	06
DATWS05	2.60	72	06
DATWS05	2.70	73	06
DATWS05	2.80	77	06
DATWS05	2.90	78	06
DATWS05	3.00	79	06
DATWS05	3.30	81	06
DATWS05	3.40	82	06

Window Sample	Sample Depth (m BGL)	Sample ID	Field
DATWS05	3.50	85	06
DATWS05	3.60	86	06
DATWS05	3.70	87	06
DATWS05	3.80	88	06
DATWS05	3.90	90	06

Table 4.16: Samples taken for environmental analysis from Southlea Farm

Results: Macrofossil assessment

4.6.16 A rapid assessment was carried out on a single sample recovered from the channel sediments from WS05 at 3.40mbgl. The scan was undertaken for the presence/absence of macrofossil remains demonstrated good preservation of insects, molluscs with a low instance of identifiable seeds. The samples were not examined for microfossil remains but it is likely that the sediment has a high potential to preserve such remains. A full report can be found in Appendix 3.

Results: Radiocarbon dating

4.6.17 A total of two subsamples were submitted for range-finder age determination from Southlea Farm WS05. Both samples failed due to insufficient carbon; supplementary material was submitted and the results are presented below.

Window Sample	Sample Depth (m BGL)	Sample ID	Field	Lab code	Sample	Calibrated age 95.4% confidence	Radiocarbon Age
DATWS05	1.95	06	06	GU46044	Organic Alluvial Silt	Failed due to insufficient carbon	Failed due to insufficient carbon
DATWS05	3.90	07	06	GU46045	Organic Alluvial Silt	Failed due to insufficient carbon	Failed due to insufficient carbon
DATWS05	2.60	171		SUERC 79207	Waterlogged roundwood *Corylus avellana sp*	3951 to 3764 cal BC and 3723 to 3716 cal BC	5040+/-30
DATWS05	3.00	172		SUERC 79211	Waterlogged wood *Salix spp*	7679 to 7576 cal BC	8605+/-29
DATWS05	3.60	173		SUERC 79212	Waterlogged rootwood indet.	8217 to 7937 cal BC and 7926 to 7918 cal BC and 7897 to 7841 cal BC	8866+/-31
DATWS05	1.80	174		SUERC 79213	Waterlogged rootwood indet.	3638 to 3508 cal BC and 3426 to 3382 cal BC	4751+/-31

Table 4.17: Sub-samples taken for radiocarbon dating from Southlea Farm.

4.6.18 The resubmitted material has provided a reliable chronology demonstrating the deposits in the northern palaeochannel were accumulating between the Mesolithic into the Neolithic period. These dates are considered to provide a reliable chronology for the deposits.

Discussion: deposits

4.6.19 A relatively simple stratigraphic sequence was recorded across the majority of the Southlea Farm area and comprised: topsoil/ploughsoil/subsoil; minerogenic alluvium; and shallow terrace sands and gravels (Shepperton Gravel Member, Figures 4.13 and 4.14). The northern and western parts of the site were characterised by thicker deposits of minerogenic alluvium, overlying organic alluvium, with sands and gravels encountered at significantly deeper depths.

4.6.20 The deepening of deposits recorded in WS05 suggests the probable presence of a palaeochannel which was also recorded in the lidar data. These deposits also correlated with high conductivity values recorded in the EM survey (Figure 4.9). The shallower, minerogenic alluvial deposits are indicative of overbank sedimentation in a floodplain environment providing a blanket coverage over the remaining areas. The depression in the gravel infilled with organic material, recorded in Fields 9 and 10, demonstrates that in addition to channel features there may also more subtle features representing a mosaic floodplain wetland. These depressions may be the remains of shallow pools or chute channels and as such represent sediment traps that have the potential to provide material for palaeoenvironmental assessment and dating.

4.6.21 The channel and depression features were characterised by a basal organic deposit suggesting a change in either energy regime or river movement. These organic deposits contained visible fragments of shell and wood suggesting stagnation occurred allowing sedimentation within a lower energy regime. These deposits have the potential to preserve palaeoenvironmental remains and further work is required in order to better characterise their potential to understand the evolution of the landscape. In addition such deposits may provide indications of human activity, particularly in relation to the multi-period occupation site located on the higher terrace (see section 4.7).

Discussion: Risk Model

4.6.22 Using a combination of the borehole and geophysical data above together with geoarchaeological information collected in 2015 (Davies *et al*: 2017), a series of deposit models were constructed for the study area for key stratigraphic interfaces: the top of Shepperton Gravel (i.e. the Late Pleistocene palaeolandsurface); the top of the fine-grained alluvial deposits encountered below the plough zone and/or made ground, and; where available, the interface between minerogenic alluvium and organic alluvium. Data collected in 2015 was utilised to fill in areas of little knowledge where borehole access was restricted. Due to the non-archaeological interpretations of the 2015 data the usage of this earlier data was limited to describing definite stratigraphic interfaces such as the depth of Shepperton Gravel.

4.6.23 The top of the Shepperton Gravel was modelled using the depth at which it was encountered below ground level (BGL). Reds or hot colours indicate a shallow depth whilst blues or cool colours indicate a deeper depth (Figure 4.16). Shallow depths indicate gravel terraces and/or the presence of gravel islands. Deeper depths indicate areas with more extensive fine-grained alluvial deposit cover, some of which may be associated with palaeochannels, contained organic-rich sediments. Near surface palaeochannels identified from lidar imagery can be combined with the model to provide a clearer indication as to the likelihood of palaeochannels and other areas where organic sediment may accumulate being identified.

4.6.24 The depths at which gravel was encountered at Southlea Farm varied across the site from 0.45m to 2.85m BGL. The north, north-west and western parts of the site was characterised by gravel encountered at deeper depths; in the north-east and south west corners of Field 06 and the north-west of Field 11, it was particularly deep. The deep organic-rich, fine-grained alluvial sediments recorded in the window sample survey correlate with palaeochannels identified from lidar imagery, and also have significantly deeper depths at which gravel was encountered compared to the rest of the site.

4.6.25 The majority of the site was marked by a notable gravel ridge / island reflecting the mapped river terrace deposits, seen clearly in Field 11 but also extending to the south-east in Fields 09 and 10. Gravel depths at the southern extent of the site were very shallow, often between 1.00m-1.50m BGL. The thin cover of soil and fine-grained alluvial deposits are conducive to the identification of shallow archaeological features as demonstrated by cropmarks and are also shallow enough to be detected by gradiometer survey.

4.6.26 In addition, the modelled Shepperton Gravel can also be viewed alongside the interpreted zonation of the valley floor from the EM survey indicating sub-surface palaeolandsurfaces and the resulting potential for archaeological remains (see 3.1.9). The results were anticipated to be complimentary with areas of high conductivity being related to gravel at shallow depths below a thin cover of alluvium whilst areas of low and moderate conductivity were related to deeper gravels and thicker, more extensive alluvium (Figure 4.17).

4.6.27 Fine-grained alluvial deposits of varying thickness (0.30-3.60m BGL) were recorded across the site. The thickness of the alluvium broadly mirrored the topography of the underlying Shepperton Gravel: the south, south-east and north-east of the site had thin fine-grained alluvial cover, whereas in the north, north-west, and west there were more substantial deposits, especially in the north-west in the same area associated with a major palaeochannel. However, the absence of organic-rich material associated with this alluvium across the majority of the site, especially in the north-east, east, and south meant that a suitable model could not be constructed for organic-rich deposits.

4.7 Summary and Conclusions

4.7.1 The majority of the site is characterised by a gravel ridge reflecting the river terrace deposits as mapped by the British Geological Survey. The shallow topsoil/subsoil is developed directly upon the Shepperton Gravels, or is associated with a thin cover of fine-grained alluvium. The geomorphology provides ideal conditions for the identification of multi-period archaeological remains via aerial photography, geophysics and fieldwalking.

4.7.2 The magnetometer and fieldwalking surveys have demonstrated the potential for archaeological remains dating from at least the Neolithic if not earlier. The flint and pot assemblages demonstrate that initial human activity may have been sporadic and related to the exploitation of the floodplain resources and the processing of animal skins. By the later prehistoric period occupation may have become more permanent and the magnetometer and cropmark evidence suggests the presence of at least two roundhouses with an associated field system.

4.7.3 The pot assemblages recovered indicate these features may date from the Bronze Age to Roman period. The potential for features to be obscured by alluvium is high and the magnetometer and cropmark survey likely only represent those features closest to the surface or features which are large enough to produce such results. The density of features is likely to be much higher and the areas where the alluvium is thicker may demonstrate better preservation.

4.7.4 The floodplain areas have thicker, though variable depths of fine-grained alluvium, which appear to broadly reflect the subsurface topography of the Shepperton Gravels. These thicker, fine grained alluvial deposits are less conducive to standard approaches of archaeological prospection (e.g. aerial photography, geophysics, fieldwalking) and may mask archaeological remains and former land surfaces. The floodplain edge is also a likely location for prehistoric human activity and any alluvial (or colluvial) deposits are likely to obscure this.

4.7.5 The palaeochannel observed to the north and north-west of the site has significant potential to contain organic-rich sediments capable of providing high quality palaeoenvironmental evidence. The resubmitted dating material has demonstrated that these deposits were accumulating from at least the Mesolithic into the Neolithic period. The presence of wood within the sediment indicates a high potential to preserve wooden archaeological remains and amongst these wooden structures may be expected. These remains may include fishtraps/weirs, platforms and trackways as well as votive deposits.

4.7.6 The need to recover intact sedimentary sequences from the palaeochannel identified by the lidar and deposit modelling should be seen as a priority. This should aim to provide samples suitable for micro and macrofossil assessment with further scientific dating. In addition areas of organic accumulation within pool-type features may also provide an opportunity to gather valuable environmental data relating to both anthropogenic and fluvial activity.

5 Results: Datchet Lakes

5.1 Introduction

5.1.1 Although the site of Datchet Lakes was heavily quarried during the later twentieth century, deposit modelling carried out during the initial stages of investigation suggested that small areas of intact ground might remain. In addition, due to the proximity of the area to the significant multi-period site at Southlea Farm (Section 4), priority was given to further investigating this possibility.

5.1.2 This section comprises a brief introduction to the site, and describes the scope of Stage 1 evaluation. This is followed by: an archaeological and historical background (Section 5.2), research context (Section 5.3), and reports on the results of the various components of the Stage 1 evaluation (Sections 5.4 and 5.5). A conclusion, with recommendations for further work, follows (Section 5.6).

Site location and scheme impact

5.1.3 The site comprises 4.3 hectares of land, divided into three fields: 13, 14, and 15 (Figure 5.1).

5.1.4 All three fields are used for recreational purposes; Field 13 borders a fishing lake, Field 14 and Field 15 border a lake used for water sports. These lakes are former gravel pits, restored for recreational use.

5.1.5 Field 13 is a combination of grassland, used for access to the lake, and wooded areas. The proposed channel outlet to the east is largely covered by an artificial bund up to 3m in height. It is divided from Field 14 by an iron fence. Field 14 represents the northern margin of the eastern lake, with a mix of wooded areas next to the water and grassed areas used for car parking and pedestrian access. Much of the land within this area has evidently been artificially raised. Field 15 represents the southern margin of the eastern lake. This also has a mix of wooded and grassed access.

5.1.6 The proposed channel will impact all three fields: the western channel inlet in Field 13 to a maximum depth of 4 metres; the north eastern channel inlet between Fields 13 and 14 to a maximum depth of 7.5 metres (including the partial removal of a 3-3.5m raised bund); and the eastern channel outlet in Field 15 to a maximum depth of 3.5 metres. Additionally, minor works will take place along the lake edges, altering the current ground level by 1m or less.

5.1.7 The site is underlain by London Clay Formation, consisting of clay, silt and sand, overlain by superficial deposits of Shepperton Gravel Member, consisting of sand and gravel.

Fieldwork extent and constraints

5.1.8 Two forms of Stage 1 evaluation were carried out in this area: **geophysical survey**; and **geoarchaeological survey** (window sample survey only). These were only carried out in the clear grassed areas without evidence of substantial artificially-raised ground.

5.1.9 The evaluation as planned and as carried out in Fields 14 and 15 corresponded closely. Only minor alterations to the borehole layout were made to accommodate vegetation and evident substantial deposits of made ground.

5.1.10 The hand auger survey planned for Field 13 was not carried out, as it was evident that the majority of boreholes planned were sited on a major artificial bund which was beyond the scope of a hand auger, and which made geophysical survey of this area impossible. The western section of Field 13 was level, and was scanned.

5.2 Historic and Archaeological Background

Mesolithic

5.2.1 Lithic findspots of this date are recorded at Datchet.

Neolithic

5.2.2 Isolated findspots of lithic finds are reported around Datchet; finds of Neolithic axes are also recorded from the river below Datchet. Wessex Archaeology have recently (February 2018) identified a Neolithic causewayed enclosure at Riding Court Farm, Datchet, approximately two kilometres north of Southlea Farm.

Bronze Age

5.2.3 A series of ring ditches have been identified at Southlea Farm (see Section 4 above. Further ring ditches have been noted at Albert Bridge/Datchet and a possible Bronze Age burial with grave goods at Datchet.

Iron Age

5.2.4 Iron Age pottery and enclosures have been identified at Southlea Farm (see Section 4 above). An Iron Age sword was recovered from the Thames at Datchet.

Roman

5.2.5 Roman finds have been identified as part of investigative works at Southlea Farm (see Section 4 above).

Early Medieval

5.2.6 Datchet is listed in the Domesday survey of 1086 (*Daceta*) and in one earlier 10th century charter (Mawer and Stenton 1925, 234). A Saxon coin hoard was found at Southlea Farm.

Medieval

5.2.7 St Helen's Monastery, Bishopsgate owned land and property in Datchet. The potential 'grange' has been associated with a site at Southlea Farm south of the current farmhouse. However, the only remains (the listed garden walls) are of 17th or 18th century date and are probably associated with the much later Southlea House. A number of broad, low banks visible on lidar survey are likely to represent ploughed-out field boundaries or remains of baulks/headlands within the medieval open fields surrounding Datchet.

Post-Medieval

5.2.8 Several listed buildings lie in the core of Datchet and its Conservation Area. 18th century mapping shows that the majority of the surrounding area comprised enclosed fields at this date.

5.3 Research Context

5.3.1 The relevant research framework for the evaluation work at this site is:

- *The Solent-Thames Research Framework for the Historic Environment Resource Assessments and Research Agendas* (Hey and Hind 2014)

5.3.2 Given the essentially speculative nature of Stage 1 evaluation at Datchet Lakes, it was not possible to identify specific research themes at this phase of the evaluation.

5.4 Results: Geophysical Survey

Introduction

5.4.1 Fields 14 and 15 were surveyed, using the methodology outlined in Section 2.4 above. A full report on the results of this survey was produced by SUMO Services (Gater, 2017c).

Results (Figure 5.1)

5.4.2 Parallel linear responses were noted in Field 14. Whilst these are typically associated with ridge and furrow cultivation, in this case they are correspond to an extant track/footpath running around the lake and can safely be interpreted as modern (this is corroborated by geoarchaeological evidence showing a considerable depth of modern made ground in the area of the linear anomalies).

5.4.3 Magnetic disturbance in Field 13 is probably associated with the adjacent lake (former gravel quarry), whereas similar disturbance in Field 15 directly relates to the modern path / track.

Conclusion

5.4.4 No significant archaeological features were identified in any of the areas surveyed at Datchet Lakes.

5.5 Results: Geoarchaeological Survey *Tom Keyworth and Andy Howard*

Topographic and Geological Background

5.5.1 The site of Datchet Lakes (TQ 0010 7592) lies east of the Windsor-Staines railway line on the outside meander bend of the Thames (Figure 5.2). The lakes are restored gravel pits currently utilised as a watersports complex. The BGS mapping indicates that the extracted mineral resources correlate with the Shepperton Gravel Member. The mapping does not indicate the presence of Alluvium.

Datchet Lakes: window sample methodology

5.5.2 The window sample survey identified various lithologies and relative depths of Holocene deposits (alluvium) overlying late Pleistocene sands and gravels. These records provide an approximation of the character of the sedimentary deposits and their potential for elucidating records of human activity as well as providing information that will inform subsequent stages of archaeological evaluation fieldwork such as trial trenching.

5.5.3 In total, seven window-sample boreholes were sunk at Datchet Lakes (Figure 5.2). Every effort was made to provide an even coverage across the area, though placement was largely determined by the constraints of a narrow site with substantial vegetation coverage and considerable deposits of made ground.

5.5.4 A total of three fields were identified for proposed geoarchaeological investigation: Fields 13, 14, and 15. The borehole survey was carried out in Field 15 and part of Field 14, though access was limited. Access was to Field 13 was not possible.

Field 15

5.5.5 Field 15 is located along the southern extent of the recreational lake. The field was flat grassland intersected with an access track surrounding the lake. In total, six boreholes were drilled.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
DATWS38	500058.888	175765.854	16.72	6.00	10.72
DATWS39	500116.372	175717.271	17.09	5.00	12.09
DATWS40	500294.457	175759.122	17.08	4.00	13.08
DATWS41	500236.211	175721.899	16.73	5.00	11.73
DATWS42	500158.945	175624.111	17.36	5.00	12.36
DATWS43	500192.857	175667.856	16.96	5.00	11.96

Table 5.1: Location and depth of window samples recorded in Field 15, Datchet Lakes

Field 14

5.5.6 Field 14 was located along the western edge of the recreational lake and comprised artificial embankments, flat grassy areas and is used periodically as an overflow car park for the water park. One borehole was drilled in this area, into the base of a modern ditch which it was felt would give the best opportunity to reach any *in situ* natural sediments which lay beneath the substantial deposits of made ground in this area.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
DATWS44	499931.002	176087.025	16.54	2.00	14.54

Table 5.2: Location and depth of window samples recorded in Field 14, Southlea Farm

Results: Stratigraphy

5.5.7 The stratigraphy of the boreholes from the southeastern part of the site (DATWS 38-43) comprised clay silt topsoil and subsoil (0.15-0.30m in combined thickness) overlying extensive deposits interpreted as made ground (to depths of at least 5.00-5.60m BGL in WS38 and WS39 respectively). The made ground comprised silt clay alluvium mixed with re-deposited gravels which overlay minerogenic alluvial clays and silts (1.50-2.00m in thickness); these latter sediments became organic-rich (1.30-2.30m in thickness) in WS40, 42, and 43, with peat recorded in WS40. The organic-rich, silt alluvium was, in turn, underlain by Shepperton Gravels at depths of 4.00-5.00m BGL in WS40, 42, and 43 (Figure 5.3). The base of the extensive made ground deposits in WS 39 was not reached, suggesting significant thickness of materials.

5.5.8 The organic deposits may relate to the infilling of a channel. The illustrated transect may represent a longitudinal section through this feature rather than a perpendicular section (Figure 5.2). These deposits were highly organic and indicate a period of stagnation or change in fluvial regime. This also demonstrates the need to refine BGS mapping through fieldwork, since they did not record alluvial deposits in this area (Figure 5.4).

5.5.9 In the northwest part of the site, a single borehole (WS44) consisted of a shallow thickness of made ground (0.90m) directly overlying Shepperton Gravel at 0.90m BGL (Figure 5.5).

Results: Samples

5.5.10 During the window-sampling deposits with environmental potential were recorded from three boreholes at Datchet Lakes and subsamples were taken (Table 5.3).

Window Sample	Sample Depth (m BGL)	Sample ID	Field
DATWS38	1.80-1.90	55	15
DATWS38	3.40-3.50	58	15
DATWS38	6.40-6.50	60	15
DATWS40	1.50-1.60	62	15
DATWS40	1.70-1.80	63	15
DATWS40	1.90-2.00	65	15
DATWS40	2.10-2.20	67	15
DATWS40	2.30-2.40	69	15
DATWS40	2.50-2.60	71	15
DATWS40	2.70-2.90	74	15
DATWS42	2.20-2.30	75	15
DATWS42	2.70-3.80	76	15
DATWS42	3.40-3.50	80	15
DATWS43	4.65-4.75	83	15
DATWS43	2.40-2.50	84	15
DATWS43	2.70	89	15
DATWS43	3.25-3.35	91	15
DATWS43	3.80-3.90	92	15

Table 5.3: Samples taken for environmental analysis from Datchet Lakes

Results: Radiocarbon Dating

5.5.11 A total of five subsamples were submitted for radiocarbon dating from two boreholes at Datchet Lakes. Of these, three failed due to insufficient carbon, and two returned Mesolithic dates. The two successful dates from WS40 demonstrate accumulation of organic sediment was occurring during the Late Mesolithic.

Window Sample	Sample Depth (m BGL)	Sample ID	Field	Lab code	Dated material	Radiocarbon Age	Calibrated age 95% confidence
DATWS38	1.80-1.90	08	15	GU46046	Organic Alluvial Silt humic acid	Failed due to insufficient carbon	
DATWS38	6.40-6.50	09	15	GU46047	Organic Alluvial Silt humic acid	Failed due to insufficient carbon	
DATWS40	1.50-1.60	10	15	SUERC-76753	Peat humic acid	5888 BP ± 32	4836 to 4696 cal BC
DATWS40	1.90-2.00	11	15	SUERC-76754	Organic Alluvial	7011 BP ± 32	5988 to 5836 Cal BC and

Window Sample	Sample Depth (m BGL)	Sample ID	Field	Lab code	Dated material	Radiocarbon Age	Calibrated age 95% confidence
					Silt humic acid		5825 to 5812 Cal BC
DATWS40	2.70-2.90	12	15	GU6050	Organic Alluvial Silt humic acid	Failed due to insufficient carbon (GU6050)	

Table 5.4: Sub-samples taken for radiocarbon dating from Datchet Lakes

Discussion: deposits

5.5.12 At Datchet Lakes the depositional sequence was complex compared to the simple sequence observed at Southlea Farm (Section 4.8.18), reflecting the intrusive quarry restoration works. The sequence in Field 13 comprised topsoil overlying made ground, which in turn rested upon shallow sands and gravels. By contrast, Field 15 at the western edge of the area consisted of topsoil/subsoil overlying extensive made ground deposits (Figure 5.5), the base of which could not be reached in some areas. Where the base of the made ground was reached it overlay minerogenic alluvium, which merged into organic alluvial material, overlying the terrace gravels.

5.5.13 The areas of organic accumulation indicate the presence of a possible channel which may now be expressed as modern field drain. Often palaeochannels are re-profiled and re-purposed as field boundaries and drainage channels on agricultural land. The organic deposits have returned age determinations indicating accumulation within the channel during the Mesolithic at a relatively shallow depth. The material that failed to return a date was taken from a much deeper part of the sequence and is likely to date to the earlier Mesolithic.

5.5.14 The deposits recorded here demonstrated a more complex sequence of minerogenic silt/sand interleaved with highly organic peats. This demonstrates changes in energy within the fluvial system over time. In addition, the deposits have the potential to provide important information regarding Mesolithic landscape evolution and should be targeted for further sample retrieval to enable high resolution palaeoenvironmental assessment and further dating. The geoarchaeological survey demonstrates that despite the area appearing to be heavily truncated by aggregate extraction there are still zones of preservation that may contain significant environmental data. In addition these deposits could preserve archaeological wooden structural remains.

Discussion: Risk Model

5.5.15 Using a combination of borehole and geophysical information collected in 2017 together with geoarchaeological information collected in 2015, a series of deposit models were constructed for the study area for key stratigraphic interfaces: the top of Shepperton Gravel (i.e. the Late Pleistocene palaeolandsurface); the top of the fine-grained alluvial deposits encountered below the plough zone and/or made ground, and; where available, the interface between minerogenic alluvium and organic alluvium. Data collected in 2015 was utilised to fill in blank areas where borehole access was restricted in 2017. Due to the non-archaeological interpretations of the 2015 data, its usage was limited to describing definite stratigraphic interfaces such as the depth of Shepperton Gravel.

5.5.16 The depth at which Shepperton Gravel was observed at Datchet Lakes ranged from 0.60 to 7.10m BGL. Field 13 to the north-west of the site had similar depths of gravel compared with the eastern extent of Field 10 at Southlea Farm with gravel being encountered at a relatively shallow depth (0.60-2.50m BGL). The depth of the gravel in Field 15 varied significantly: the eastern area illustrates moderately deep depths

(2.50-4.00m BGL) whilst the western area was significantly deeper with made ground encountered to at least 5.60m BGL (Figure 5.5).

5.5.17 The thickness of fine-grained alluvium observed at Datchet Lakes varied from 0.25-6.37m BGL. The thickness of the alluvium in Field 13 was relatively thin for the majority of the area except the eastern part. No organic-rich material was identified, although sampling was limited to a single borehole during the 2017 field campaign (the majority of the data from Field 13 came from the 2015 ground investigations). In Field 15 the alluvium was thin at the eastern and western extent of the area, but relatively thick in the centre. Both WS42 and 43 encountered organic-rich alluvium possibly indicating the location of a palaeochannel running broadly north-south. (Figure 5.4).

5.5.18 The thickness of the made ground at Datchet Lakes varied from 0.15-5.60m BGL. The thickness of the made ground (including topsoil/subsoil) in Field 13 was relatively thin but variable (thicker in places); however this variation reflects drilling across the artificial embankments surrounding the perimeter of the site to the north. In Field 15 there was extensive made ground (around 5.00m+ BGL) in the western area whilst to the east it was often only 0.15-0.35m BGL in thickness (Figure 5.5).

5.5.19 There is a considerable amount of disturbance of deposits at Datchet Lakes, which comprise extensive made ground associated with the restoration of the former quarried area. However, below the substantial accumulations of made groundorganic rich alluvial deposits of Mesolithic date were encountered demonstrating the potential of this area.

5.6 Summary and Conclusions

5.6.1 The Stage 1 evaluation provided little evidence for the presence of surviving cultural archaeology at Datchet Lakes. However, the geoarchaeological survey suggested that significant palaeoenvironmental remains, possibly of Mesolithic date, survive in parts of the site, despite heavy disturbance from twentieth-century quarrying. The lack of other environmental data prevents the significance of this being explored further. Microfossil assessment may help to shed light on the precise nature of the accumulation and may preserve indicators of human activity.

5.6.2 Further work at Datchet Lakes is not generally recommended, as areas of intact ground likely to contain well-preserved palaeoenvironmental remains in general lie below the level of proposed impact. However, the made ground deposits have been demonstrated to exist in variable thicknesses and areas of preservation may be encountered that are not shown on the model. It may be appropriate to recover a sequence for palaeoenvironmental assessment from the vicinity of WS40 where Mesolithic deposits have been shown to survive.

6 Results: Horton, Station Road Wraysbury (south of the railway)

6.1 Introduction

6.1.1 The area in which the site lies was identified as a potential island of intact ground through deposit modelling carried out during initial stages of evaluation.

6.1.2 This section comprises a brief introduction to the site and describes the scope of Stage 1 evaluation. This is followed by: an archaeological and historical background (Section 6.2); research context (Section 6.3); and reports on the results of Stage 1 evaluation (Section 6.4). A conclusion, with recommendations for further work, follows (Section 6.5).

Site location and scheme impact

6.1.3 The site comprises 0.73 hectares of level land, divided into two fields (16 and 17) (Figure 6.1).

6.1.4 The two fields are currently combined into one and used as horse pasture. A disused gravel pit restored as a lake lies immediately to the south of the southern field.

6.1.5 The fields are bordered by deep mature hedgerows, with the boundary between the two fields marked by a former hedgerow, now consisting largely of mature trees with the areas in between cleared by grazing.

6.1.6 The proposed channel and associated working areas will impact the entirety of both fields to a maximum depth of 3.5 metres.

6.1.7 The underlying geology of the site is the London Clay Formation, consisting of clay, silt and sand and overlying this is the Shepperton Gravel Member.

Fieldwork extent and constraints

6.1.8 A single form of Stage 1 evaluation was carried out in this area; **geoarchaeological survey** (borehole survey only). This was carried out as planned.

6.2 Historic and Archaeological Background

6.2.1 Most archaeological investigation in and around Wraysbury has centred on the grounds of St Andrew’s Church. Multiple excavations and geophysical survey have recovered evidence for a multi-phase occupation of the site and its environs. There are a few exceptions of archaeological events recorded at Manor Farm, Wraysbury and Waylands Nursery, Wraysbury. To date there has been no archaeological investigations in the direct path of the proposed channel on Station Road.

6.2.2 No previous archaeological mitigation has taken place in the immediate vicinity however extensive excavations at Kingsmead Quarry to the north have revealed occupation of the area since the Palaeolithic.

Early Prehistoric

6.2.3 Excavations carried out in the grounds of St Andrew’s Church recovered various flint artefacts dating from the Late Mesolithic to the Early Neolithic. The worked flint included a variety of artefacts such as flakes, blades and two barbed and tanged arrowheads. These are thought to be residual finds and therefore indicative of the earliest possible settlement activity of this site.

Bronze Age

6.2.4 During the same excavation a significant amount of pottery dating to the Later Bronze Age was discovered. The pottery was found within a number of large pits. The presence of dating material and archaeological features would suggest activity on the site at this time. Later Bronze Age settlements have been found in similar locations in the middle Thames Valley.

Iron Age

6.2.5 Archaeological evaluations carried out at Manor Farm, Wraysbury revealed evidence of Late Bronze Age/Early Iron Age occupation comprising gullies, ditches, pits and post holes. Late Bronze Age pottery and a few diagnostic sherds of Early Iron Age pottery were found within several of these pits and ditch systems. Settlement activity in the vicinity of these features is indicated by the quantity of pottery recovered. The gullies/ditches would appear to represent a linear boundary of a field system or possibly defining a trackway, and the results could indicate activity that may represent a further element of the late Bronze Age/ Early Iron Age activity located at Manor Farm.

Roman

6.2.6 Roman activity also appears to focus on the area surrounding the church of St Andrew. During excavations carried out in 1974, Roman pottery including mortarium, samian and greyware (although heavily abraded) was found over a large area surrounding the church, which suggests occupation of some sort in this area. Roofing tiles were also found which may suggest a villa or farmstead located nearby. Other surface finds in the vicinity include various coins and greyware sherds.

Anglo-Saxon

6.2.7 From the available documentary and archaeological evidence it is suggested that the Saxon settlement at Wraysbury centres on the church. As discussed in earlier paragraphs, the site of St Andrew’s appears to have been occupied sporadically since the Mesolithic period. An archaeological excavation in 1980 by the Trust for Wessex Archaeology identified evidence of continuity of settlement at this site during the later Saxon period (late 9th to 12th centuries). The area has also been subject to a resistivity and geophysical survey. The archaeological investigations revealed a series of cropmarks, surface finds and during excavation a number of pits and gullies. One of the large pits contained layers of burnt materials and was thought to be a furnace with three accompanying ‘stoke holes’. The features were dated to the Saxon period.

6.2.8 To the north west of Station Road, evidence for a Saxon ‘Grubenhaus’ was discovered at Waylands Nursery through the application of a resistivity survey. The results of the survey showed rectangular anomalies. Slag and numerous finds were present on the site. Upon excavation, evidence of Saxon occupation took the form of various pits and a sunken-featured building with four associated postholes. The main feature contained 171 sherds of 5th century Saxon pottery, with fragments of hearth lining, a chalk spindle whorl, a nail stem, a small fragment of Mayen lava quern stone and large quantities of animal bone.

Medieval

6.2.9 During excavations in 1980, a medieval trackway was identified in close proximity to the church of St Andrew. It is characterised by two parallel ditches. It appears that for most of early history, the focus of the village of Wraysbury centred on the church. By the medieval period however, the centre of the town had shifted northwards to its modern day configuration.

6.3 Research Context:

6.3.1 The relevant research framework for the evaluation work at this site is:

- *Surrey Archaeological Research Framework* (Bird 2006)

6.3.2 Given the essentially speculative nature of Stage 1 evaluation at Station Road Wraysbury, it was not possible to identify specific research themes from the above Framework at this phase of the evaluation, other than the possibility to address a general need for more environmental evidence for all periods in the region.

6.4 Results: Geoarchaeological Survey *Tom Keyworth and Andy Howard*

Topographic and Geological Background

6.4.1 The site at Horton, Station Road (centred on TQ 0114 7423) is located 0.78km north-east east of Wraysbury immediately north of a large restored gravel pit lake. The site comprises two fields: Field 16 to the north and Field 17 to the south. The ground surface was relatively flat, gently inclined north to south from around 16.20m AOD to 16.70m AOD at the edge of the lake.

6.4.2 The site lies some 1.80km from the River Thames and 0.27km from the Colne Brook, a tributary of the River Colne, which in turn flows into the River Thames. The BGS mapping indicates that the former mineral resources of the site are correlated with the Shepperton Gravel Member.

Horton: window sample methodology

6.4.3 In total, five window-sample boreholes were drilled at Horton: three in Field 16 and two in Field 17 (Figure 6.1).

Field 16

6.4.4 Field 16 comprised undulating scrubby grassland together with some mature trees, and is used for grazing horses. A total of three boreholes were drilled: HORWS01, 02, and 03.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
HORWS01	501153.881	174255.524	16.27	2.00	14.27
HORWS02	501133.814	174233.936	16.64	3.00	13.64
HORWS03	501185.049	174208.087	16.46	3.00	13.46

Table 6.1: Location and depth of window samples recorded at Field 16, Horton.

Field 17

6.4.5 Field 17 is an extension of Field 16 but is more open with fewer mature trees, leading directly onto the northern edge of the lake. As with Field 16, the area is used for grazing. A total of two boreholes were sunk: HORWS04 and 05.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
HORWS04	501173.381	174256.409	16.37	6.70	9.67
HORWS05	501131.435	174271.894	16.28	5.00	11.28

Table 6.2: Location and depth of window samples recorded at Field 17, Horton.

Results: stratigraphy

6.4.6 The stratigraphy of Field 16 broadly comprised: clay silt topsoil and silt clay subsoil (combined thickness of 0.20-0.30m, Figure 6.2) overlying 0.50-0.95m of made ground, in turn overlying yellowish brown silt sand minerogenic alluvium (0.35-1.00m in thickness). This merged into an organic silt sand (0.10-0.80m in thickness) and overlay the Shepperton Gravels at depths of between 1.77-2.00m BGL. These deposits represent a thin alluvium likely to be derived from overbank flooding from the Colne Brook (Figure 6.2).

6.4.7 In Field 17 below the dark greyish brown silt clay topsoil and subsoil (0.30-0.70m in combined thickness), the sediments comprised extensive made ground consisting of mixed alluvial silts, clays and angular flinty gravels (Figure 6.3). The base of the made ground was not reached, with the deepest borehole terminated at 6.70mbgl due to water ingress; consequently the depth of the Shepperton Gravel in this field was not established (Figure 6.4).

Results: samples

6.4.8 The extent of made ground deposits in Field 17 meant that the collection of sediment samples was restricted to two of the boreholes in Field 16.

Window Sample	Sample Depth (m BGL)	Sample ID	Field
HORWS02	1.72-1.82	96	16
HORWS02	1.15-1.25	96	16
HORWS02	1.50-1.60	98	16
HORWS03	1.60-1.70	99	16
HORWS03	0.80-0.90	100	16
HORWS03	1.30-1.40	101	16

Table 6.3: Samples taken for environmental analysis from Horton.

Results: macrofossil assessment

6.4.9 A single sample was processed for macrofossil remains from WS02 1.50mbgl. This resulted in the recovery of low numbers of waterlogged seeds, molluscs and fly puparia. Although no microfossil remains were processed, the organic nature of the sediment suggests that such remains are likely to be preserved. A full report can be found in Appendix 3.

Results: radiocarbon dating

6.4.10 A single subsample was taken for age determination for this site which failed due to insufficient carbon. A replacement sample was submitted which returned a late Mesolithic age determination.

Window Sample	Sample Depth (m BGL)	Sample ID	Field	Lab code	Sample	Calibrated date 95% confidence	Radiocarbon Age BP
HORWS02	1.55	14	16	GU46052	Organic alluvial silt humic acid	Failed due to insufficient carbon	Failed due to insufficient carbon
HORWS02	1.72	179	16	SUERC 79216	Waterlogged roundwood indet.	4841 to 4716 cal BC	5907+/-29

Table 6.4: Sub-samples taken for radiocarbon dating from Horton.

Discussion: deposits

6.4.11 The depth and extent of the made ground at Horton was broadly split between the two fields. There was extensive (4.00-7.40m BGL) made ground to the south in Field 17, closest to the lake, and relatively shallow made ground (0.80-2.00m BGL) to the north in Field 16.

6.4.12 The depth at which the Shepperton Gravels were encountered also mirrored the extent of the made ground. The sands and gravels were encountered as little as 0.9m BGL in the northern extent of Field 16, increasing in depth into Field 17 to around 4.15m BGL, before increasing to 7.40m BGL at the southern-most extent of the site, closest to the lake.

6.4.13 The fine-grained alluvium was limited to the north in Field 16 where a thin horizon of minerogenic sediment overlay more organic-rich deposits, in turn resting upon the Shepperton Gravel. These likely represent alluvial deposits associated with overbank flooding of the Colne Brook. The resubmitted dating sample returned a Late Mesolithic age determination at c.1.72mbgl. However, the survey demonstrates that some sediments have remained undisturbed, despite aggregate extraction locally. These deposits may have the potential to seal cultural archaeological deposits.

Discussion: Risk Model

6.4.14 A basic risk model was produced for this site, given the single evaluation method used.

6.4.15 The made ground thickness at Horton ranged from 0.80-7.40m. The made ground, including topsoil and subsoil was not extensive in Field 16 extending to depths of approximately 1.10m BGL. In Field 17 there was significant made ground extending to depths of at least 7.40m BGL closest to the lakeshore (Figure 6.4).

6.4.16 The top of the Shepperton Gravel in Field 16 was relatively shallow, and was observed at depths of 1.7-2.00m. The ground investigation data from 2015 suggested depths as shallow as 0.90m beyond the northern boundary of Field 16. This depth gradually increased southwards into Field 17, although no precise gravel depths were observed at the southern extent of Field 16. In Field 17, the gravel depth was not recorded during the 2017 survey; however, it was proved at depths of 7.30-7.40m BGL during the 2015 ground investigations (Figure 6.4).

6.4.17 There was insufficient data to construct a model of the alluvial deposits as the majority of supplementary data from the 2015 ground investigations was not described in sufficient detail. In addition, no gradiometer or EM surveys were conducted at Horton.

6.4.18 The site's location immediately to the north of restored gravel pit means that there has been heavy disturbance to the southern extent, primarily Field 17, where there are extensive made ground deposits overlying the gravels. Further investigation in this area is not recommended as it is likely that the restoration work has substantially truncated the sequence.

6.4.19 The area of Field 16, has the potential to preserve intact environmental and cultural archaeological sequences. The shallower depths of Shepperton Gravel are overlain by a thin veneer of fined-grained alluvium which has been dated to the late Mesolithic. To the north-west of the site lies Horton Kingsmead Quarry which was subject to an extensive programme of excavations over the course of a decade by Wessex Archaeology (Chaffey *et al.* 2017). This revealed multi-period settlement spanning 12,000 years but significantly also revealed a substantial palaeochannel to the south of the site, bringing it within close proximity of the northern extent of the Horton, Station Road site.

6.5 Summary and Conclusions

6.5.1 The Stage 1 evaluation did not provide direct evidence of surviving cultural archaeology at Station Road, Wraysbury. However, the survey did establish that an area of intact ground exists beneath Field 16, which has the potential for the survival of archaeological remains. The remaining part of the site, Field 17, is likely to be archaeologically sterile following truncation by twentieth-century aggregate extraction.

6.5.2 The single age determination recovered from the area suggests a Late Mesolithic date for the deposits. This date was recovered from a fairly shallow depth, less than 2m bgl, and further dating is required to support it. The site has the potential to contain buried land surfaces of some antiquity despite later truncation.

6.5.3 The palaeoenvironmental potential of this area is deemed low given the lack of deep sequences or identified palaeochannels. If archaeological features are preserved here there may be a waterlogged component to the deposits. No further work is recommended for the material recovered during the 2017 geoarchaeological survey.

7 Results: Thorpe Hay Meadow

7.1 Introduction

7.1.1 Preliminary investigations at Thorpe Hay Meadow suggested that deep alluvial deposits containing organic remains might survive south of a large area of aggregate extraction which had been reinstated as land-fill. Therefore this area was characterised as of high archaeological risk on the basis of initial desk-based evaluation.

7.1.2 This section comprises a brief introduction to the site and describes the scope of Stage 1 evaluation. This is followed by: an archaeological and historical background (Section 7.2), research context (Section 7.3), and reports on the results of the various components of the Stage 1 evaluation (Sections 7.4 and 7.5). A conclusion, with recommendations for further work, follows (Section 7.6).

Site location and scheme impact

7.1.3 The site comprises 7.6 hectares of level land, divided into four fields (Figure 7.1). Field 18 is rough grassland, currently used as pasture. It is divided from a large area of rough grassland overlying an extensive landfill site to the north by the remnants of a hedgerow, and is bordered by housing to the south. Field 19 adjoins Field 18 to the west, and is wooded. Field 20 lay to the south-west of Field 19, divided by a small area of housing and is used as horse pasture. A small former gravel pit lies to the west. Field 21 lies a little to the south of the other Thorpe Hay Meadow fields. It is grassland, initially thought to overlie intact deposits.

7.1.4 The underlying geology of the site is mapped as the London Clay Formation, comprising clay, silt and sand. This was overlain by superficial deposits of the Shepperton Gravel Member, consisting of sand and gravel, and alluvium.

7.1.5 The proposed channel impacts upon Fields 18, 19, and 20, to a maximum depth of 3.5m. The channel will affect the entire width of the fields; the area to either side of the channel in Field 18 forms part of an area of habitat creation. Field 20 is similarly affected by the channel, but the areas to either side are outside the impact of the scheme. Field 21 initially fell within the zone of impact, but later changes mean that it is now outside the impact area.

Fieldwork extent and constraints

7.1.6 Two forms of Stage 1 evaluation were carried out at this site: **geophysical survey**; and **geoarchaeological survey** (both borehole and EM survey).

7.1.7 The forms of evaluation used varied by field due to the differing land use. Fields 18, 20, and 21 were subject to geophysical survey; Field 19 was excluded from this due to the degree of vegetation cover. Following the geophysical survey of Field 21 it was revealed that a substantial layer of landfill material had been deposited across the site, masking any underlying readings. It was therefore decided to carry out no further Stage 1 evaluation in this field; EM survey would be similarly masked, and borehole survey was potentially unsafe. Given that this field is no longer impacted by the RTS it is not proposed to carry out further work here.

7.1.8 Fields 18 and 20 were covered by EM survey. Fields 19 and 21 were unsuitable due to vegetation cover and overburden as discussed above.

7.1.9 Fields 18 and 20 were covered by borehole window sampler survey. Field 19 was initially to be covered by hand auger survey. However, this proved impracticable due to the degree of vegetation cover and tree roots. Instead the east-west window sampler transect from Field 18 was extended into an open area between trees in Field 19.

7.2 Historic and Archaeological Background

Palaeolithic

7.2.1 Monitoring of geotechnical test-pits at Thorpe Hay Meadow revealed a deep stratified Pleistocene sediment deposition with high potential for the preservation of environmental remains which would aid in the understanding of the past environment. In addition the potential for wooden archaeological remains is also high, as demonstrated by the presence of an undated charred post pushed into organic sediments, found within one of the test pits.

Neolithic

7.2.2 A scatter of Neolithic flint artefacts was discovered at Staines Lane, Thorpe. Excavations at the Elmsleight centre in Staines revealed Neolithic settlement activity. And several inhumations have been excavated to the northwest of Thorpe.

Bronze Age

7.2.3 Swords, spearheads, and a bone dagger have been recovered from the Thames near to Staines. A notable cluster of Bronze Age sites is visible parallel to the River Thames to the north-west of Staines. A series of cropmark enclosures associated with findspots, include farming enclosures, possible flood defences, and a burial ground, indicate a concentrated centre of activity. A smaller group of sites is visible in the north-east quarter of Egham; features, including gullies along with pottery and flint (926) are present, near the modern railway line. Further evidence of settlement activity comes from Thorpe Lea Nurseries.

Iron Age

7.2.4 The Bronze Age site noted at Egham continued in use into this period, with pits and other features present.

Roman

7.2.5 The area to the north-west of Staines was a focus of Roman occupation in the area, with multiple find spots as well as evidence for structures, transport infrastructure, flood defences, and burial. This area has been identified as a 1st-4th century AD settlement, known as *Pontibus*, at the crossing point of the three Roman roads running through the Study Area. These are recorded as running from London to Silchester, London to Winchester and Staines to Ewell. Individual finds have also been made in Thorpe and Staines, and a Romano-British field system identified at Thorpe.

Early Medieval

7.2.6 Findspots indicate that settlement continued on the *Pontibus* site into the Early Medieval period. Multiple find spots and possible Saxon features have been identified, although no identifiable structures have been excavated or recorded. Most evidence relates to ceramic finds, pits, gullies and fragments of building materials.

Medieval

7.2.7 Individual finds include a sword link and spearhead at Thorpe. Medieval Staines continued to develop around the former Roman settlement of *Pontibus*. Agricultural evidence is present to the north-west of the settlement with evidence of occupation including animal bone, ceramics and tiles deposited close to the river. The Thames

Bridge was constructed in AD 1232 and its foundations remain and are located approximately 100m south of the existing Staines Bridge. Evidence of occupation during this period resumes in Egham around the High Street/Church Street. The village of Thorpe contains a small Medieval core centred around the 12th century Church of St Mary. Medieval features have also been recorded elsewhere in the village.

Post-Medieval

7.2.8 Rural industry is present in records of brickpits near Egham, and Thorpe Mill.

7.3 Research Context

7.3.1 The relevant research framework for the evaluation work at this site is:

- *Surrey Archaeological Research Framework* (Bird 2006)

7.3.2 No specific research themes were identified from the above framework relevant to Thorpe Hay Meadow.

7.4 Results: Geophysical Survey

Introduction

7.4.1 Fields 18, 20, and 21 were surveyed, using the methodology outlined in Section 2.4 above. A full report on the results of this survey was produced by SUMO Services (Tanner, 2017).

Results

7.4.2 No magnetic responses were recorded that could be interpreted as being of archaeological interest (Figure 7.2).

7.4.3 Amorphous responses throughout both Fields 18 (south) and 20 are directly related to differing periods of flooding and earlier water courses; and reflect natural magnetic variations in the soils.

7.4.4 The dataset for Field 21 was dominated by magnetic disturbance. This appears to be related to the use of the field for depositing unofficial landfill.

7.4.5 The Field 18 survey was extended beyond the field boundary into the area of known landfill to the north. As might be expected, magnetic disturbance covers this entire area.

7.4.6 Ferrous responses close to boundaries are due to adjacent fences and gates. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data and their form is best illustrated in the XY trace plots. These responses are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil and are commonly assigned a modern origin. Only the most prominent of these are highlighted on the interpretation diagram.

Conclusion

7.4.7 The geophysical survey did not identify any responses of archaeological interest. The results are dominated by natural alluvial responses alongside areas of magnetic disturbance associated with landfill deposition subsequent to aggregate extraction.

7.5 Results: Geoarchaeological Survey *Tom Keyworth and Andy Howard*

Topographic and Geological Background

7.5.1 The site of Thorpe Hay Meadow (centred on TQ 0314 7001) is located on the outside bend of a large meander of the River Thames immediately to the north and west of Egham Hythe (Figure 7.3). In contrast to other sites, Thorpe Hay Meadow comprised a narrow ribbon of land, almost solely contained within the proposed channel.

7.5.2 The BGS mapping shows the entire area blanketed by alluvium though it is surrounded by terrace deposits of Shepperton Gravel. The current land use is pastoral grassland. To the north and north-west of Fields 18 and 19 (see below) there is a formerly quarried area subsequently used as landfill (although this did not extend into any of the areas under evaluation). Thorpe Hay Meadow Site of Special Scientific Interest (SSSI) is located to the west of Field 19 and north of Field 20. This is thought to be the last surviving example of unimproved grassland on Thames Gravel in Surrey (http://www.surreywildlifetrust.org/reserves/thorpe-hay-meadow); this SSSI was not impacted by evaluation.

Thorpe Hay Meadow: EM survey methodology

7.5.3 An EM survey was carried out in advance of the borehole survey in Fields 18 and 20. The data was used to delimit zones of high, moderate, and low conductivity. The entire area of Field 20 was zoned as high conductivity with the north-west corner being very high. In Field 18 the majority of the field had high conductivity readings with the exception of the south-western and eastern extents where the readings were moderate-high (Figure 7.4).

Thorpe Hay Meadow: window sample methodology

7.5.4 In total, fifteen boreholes were sunk. These were spaced ~40m apart and every effort was made to provide an even coverage across the site. The survey comprised three fields: Field 19 was located centrally with Field 18 immediately to the east. Field 20 was located separately to the south west.

Field 18

7.5.5 Field 18 lay immediately to the north of Egham Hythe and comprised meadow. In total, nine boreholes were sunk: THMWS 01, 06, 07, 12, 13, 14, 20, 21, and 22.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
THMWS01	503250.874	170102.183	13.89	2.00	11.89
THMWS06	503284.690	170103.762	13.83	2.00	11.83
THMWS07	503319.149	170105.097	13.87	4.00	9.87
THMWS12	503355.833	170105.972	14.00	4.00	10.00
THMWS13	503406.299	170108.804	14.03	4.00	10.03
THMWS14	503444.905	170109.652	14.02	4.00	10.02
THMWS20	503393.752	170094.045	14.08	4.00	10.08
THMWS21	503294.637	170126.954	13.75	2.00	11.75
THMWS22	503254.411	170043.707	13.84	3.00	10.84

Table 7.1: Location and depth of window samples recorded at Field 18, Thorpe Hay Meadow.

Field 19

7.5.6 Field 19 was located immediately north-west of Egham Hythe and was thick mature woodland. A single borehole was sunk in this field: THMWS 01.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
THMWS10	503214.916	170104.444	13.92	3.00	10.92

Table 7.2: Location and depth of window samples recorded at Field 19, Thorpe Hay Meadow.

Field 20

7.5.7 Field 20 was located immediately west of Egham Hythe, occupying a flat grassy field. The western boundary was demarcated by a watercourse known as the Mead Lake Ditch. A total of five boreholes were sunk in this field: THMWS 15, 16, 16, 18, and 19.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
THMWS15	502995.803	169875.792	13.40	4.00	9.40
THMWS16	502998.114	169828.267	13.42	3.00	10.42
THMWS17	503047.516	169915.484	13.61	3.00	10.61
THMWS18	503048.286	169864.224	13.52	5.00	8.52
THMWS19	503086.265	169928.559	13.65	3.00	10.65

Table 7.3: Location and depth of window samples recorded at Field 20, Thorpe Hay Meadow.

Results: EM survey

7.5.8 The conductivity zones were subsequently interpreted with regards to their anticipated geomorphology of the study area. The majority of the area demonstrated high conductivity (Figure 7.5). The area of very high conductivity in Field 20 relates to a palaeochannel and as such demonstrates moderate archaeological potential (Figures 7.6 and 7.7).

7.5.9 The remaining areas in Field 18 and 20 presented mostly high conductivity which correlates with a floodplain alluvium which overlies the gravel terrace here. The level of conductivity provides an indication of site geomorphology and sediment type which has been defined in Figure 7.6.

Results: Deposits

7.5.10 The stratigraphy for Thorpe Hay Meadow comprised the following broad sequence: silt clay topsoil becoming clay silt subsoil (combined thickness of 0.40-0.60m) overlying mottled orange brown, clay silt alluvium (0.90-175m in thickness). With depth this changed to dark organic-rich silts and clays (1.35-2.30m in thickness) with substantial accumulations of peat (0.25-1.30m) immediately overlying the Shepperton Gravels at depths of 2.55-3.90m BGL. In the north-east corner of Field 20 as well as Field 19 and the western extent of Field 18 the sequence was similar but the gravel was encountered at shallower depths (1.55-2.70m BGL) with less substantial (0.30-1.50m in thickness) organic alluvial deposits. (Figure 7.8).

7.5.11 The two deeper areas of organic accumulation, Field 18 and Field 20 likely represent in-channel sedimentation. These are the most substantial channels recorded for the scheme and as such have high palaeoenvironmental potential. The high organic content suggests changes in energy regime over time (Figure 7.9).

Results: Samples

7.5.12 During the window-sampling deposits with palaeoenvironmental potential were recorded from eleven boreholes at Thorpe Hay Meadow and subsamples were taken (Table 7.4).

Window Sample	Sample Depth (m BGL)	Sample ID	Field
THMWS06	1.55-1.70	128	18
THMWS07	2.30-2.50	129	18
THMWS12	2.7	130	18
THMWS12	3.70-3.80	131	18
THMWS13	1.70-1.75	132	18
THMWS13	2.35-2.45	133	18
THMWS13	2.9	134	18
THMWS14	1.8	135	18
THMWS14	2.8	136	18
THMWS15	1.60-1.70	137	20
THMWS15	2.5	138	20
THMWS15	2.9	139	20
THMWS16	1.4	140	20
THMWS16	2	141	20
THMWS16	2.35	142	20
THMWS17	1.40	143	20
THMWS17	1.50	144	20
THMWS17	1.75	145	20
THMWS18	1.80	146	20
THMWS18	2.50	147	20
THMWS18	2.65	148	20
THMWS18	2.80	149	20
THMWS18	2.90	150	20
THMWS18	3.75	151	20
THMWS19	1.40	152	20
THMWS19	1.60	153	20
THMWS19	1.80	154	20
THMWS19	1.90-2.00	155	20
THMWS20	2.70-2.85	156	18

Table 7.4: Samples taken for macrofossil assessment from Thorpe Hay Meadow

Results: macrofossil assessment

7.5.13 A single sample was assessed for plant macrofossil remains from WS18 1.80mbgl from which an age determination of 5199 to 5178, 5067 to 4897 and 4866 to 4851 cal BC (SUERC-76772: 6076 BP ± 32) was returned indicating accumulation during the Mesolithic period. This sample contained good preservation of waterlogged plant and insect remains as well as molluscs and ostracods. The deposits here demonstrate a high potential to yield well-preserved micro and macrofossil remains. A full report can be found in Appendix 3.

Results: radiocarbon dating

7.5.14 A total of fourteen sub-samples were submitted to SUERC Laboratories from window samples at Thorpe Hay Meadow (Table 7.5).

7.5.15 The peat sample from WS06 (SUERC-76758) was located on the boundary between the fine-grained mineralised and organic alluvial deposits 0.50m above the Shepperton Gravel. This returned an age determination suggesting accumulation during the Mesolithic. The upper sample from WS12 (SUERC-76762) was taken in the middle of the fine-grained organic alluvium, 1.20m above the Shepperton Gravel whilst the lower sample (SUERC-76763) was taken from directly above the basal boundary with the Shepperton Gravel. This demonstrated the onset of accumulation within the channel occurred in the early Mesolithic.

7.5.16 The upper sample (SUERC-76764) from WS14 was taken from the middle of the fine-grained organic alluvium, 2.20m from the top of the Shepperton Gravel whilst the failed lower sample was recovered 1.20m above the Shepperton Gravel. Again this returned a Mesolithic date commensurate with those recovered from the channel and wider floodplain alluvium. This group of samples provides a reliable range-finder chronology for the accumulation in this area.

7.5.17 The next group of samples were taken from locations in Field 20. The upper and lower samples from WS16 were taken from the middle of the organic alluvium 1.40m (SUERC-76765) and 2.35m (SUERC-76766) above the boundary with the Shepperton Gravel respectively. Both samples returned early Mesolithic dates demonstrating a continuation of the alluviation recorded in Field 19.

7.5.18 The upper sample from WS17 (SUERC-76767) was taken on the boundary between the mineralised alluvium and the 0.50m thick peat accumulation, 1.60m above the Shepperton Gravel. The lower sample (SUERC-76768) was taken 0.10m above the Shepperton Gravel, more or less on the basal boundary. These again returned Mesolithic age determinations

7.5.19 The upper sample from WS18 (SUERC-76772) was taken from the top of the substantial (1.90m thick) peat accumulation, 2.10m above the top of the Shepperton Gravel. The middle sample (SUERC-76772) was taken from the middle of the same peat accumulation, 1.25m above the Shepperton Gravel. The lower sample (SUERC-76774) came from a separate peat accumulation, located directly above the basal boundary with the Shepperton Gravel. These form a consistent group of dates with the onset of accumulation occurring in the early postglacial period and continuing to the mid-Mesolithic.

7.5.20 The upper sample from WS19 was taken from the top of a peat accumulation, 1.60m above the Shepperton Gravel boundary whilst the lower sample was taken from bottom of the same peat accumulation, some 1.10m above the Shepperton Gravel. These again demonstrated accumulation during the early Mesolithic.

Window Sample	Sample Depth (m BGL)	Sample ID	Field	Lab code	Sample	Radiocarbon Age	Calibrated age 95% confidence
THMWS06	1.55	21	18	SUERC-76758	Peat humic acid	7799 BP ± 32	6691 to 6566 BC and 6545 to 6530 cal BC
THMWS12	2.7	22	18	SUERC-76762	Peat humic acid	6909 BP ± 32	5875 to 5858 BC and 5850 to 5724 cal BC

Window Sample	Sample Depth (m BGL)	Sample ID	Field	Lab code	Sample	Radiocarbon Age	Calibrated age 95% confidence
THMWS12	3.75	23	18	SUERC-76763	Peat humic acid	9829 BP ± 32	9320 to 9248 cal BC
THMWS14	1.8	24	18	SUERC-76764	Peat humic acid	6153 BP ± 32	5211 to 5011 BC
THMWS14	2.8	25	18	GU46056	Peat humic acid	Failed due to insufficient carbon	
THMWS16	1.4	26	20	SUERC-76765	Peat humic acid	8128 BP ± 32	7284 to 7276 BC, 7241 to 7235 BC and 7185 to 7048 cal BC
THMWS16	2.35	27	20	SUERC-76766	Peat humic acid	9037 BP ± 32	8292 to 8235 cal BC
THMWS17	1.4	28	20	SUERC-76767	Peat humic acid	6631 BP ± 32	5626 to 5510 and 5498 to 5495 cal BC
THMWS17	1.75	29	20	SUERC-76768	Peat humic acid	8521 BP ± 32	7592 to 7533 cal BC
THMWS18	1.8	30	20	SUERC-76772	Peat humic acid	6076 BP ± 32	5199 to 5178, 5067 to 4897 and 4866 to 4851 cal BC
THMWS18	2.65	31	20	SUERC-76773	Peat/ Wood	8196 BP ± 32	7315 to 7081 cal BC
THMWS18	3.75	32	20	SUERC-76774	Peat humic acid	10213 BP ± 32	10126 to 9821 cal BC
THMWS19	1.4	33	20	SUERC-76817	Peat humic acid	8267 BP ± 25	7451 to 7401 and 7373 to 7184 cal cal BC
THMWS19	1.9	34	20	SUERC-76818	Peat humic acid	9035 BP ± 25	8288 to 8239 cal BC

Table 7.5: Samples taken for radiocarbon dating from Thorpe Hay Meadow

Discussion: Deposits

7.5.21 The sequences identified at Thorpe Hay Meadow during the geoarchaeological survey revealed substantial deposits of organic-rich fine-grained alluvium, including significant peat accumulations throughout Fields 18 and 20 since the early postglacial. These represent both in-channel and overbank sedimentation (Figure 7.10).

7.5.22 The deposits recorded in Field 18 are suggested to represent a substantial palaeochannel with a high organic content. The samples submitted for age determination have allowed a range-finder chronological framework to be established indicating that the majority of these deposits accumulated during the early Holocene. The rich organic content of these deposits indicates that they have the potential to provide high quality palaeoenvironmental records. The overbank alluvial deposits also date to this period and have a high potential to preserve former landsurfaces as well as wooden structural archaeological remains.

7.5.23 The results of the survey in Field 20, suggest the presence of a second northwest-southeast aligned palaeochannel which was also dominated by substantial organic-rich alluvial deposits infilling an elongated depression within the gravels. The chronological framework here suggests an even earlier phase of channel activity dating to the Pleistocene or early postglacial to early Holocene. These deposits are also of high palaeoenvironmental potential.

7.5.24 The deposits recorded in Field 19 had less organic-rich alluvial deposits overlying shallow depths of gravels, suggesting the presence of a buried gravel island or tract of terrace (Figure 7.11). The radiocarbon dating of the overlying alluvial deposits suggests that any archaeological remains are likely to be Early Mesolithic in date.

7.5.25 The EM survey was carried out in areas with significant fine-grained alluvial deposits, including waterlogged peats and resulted in moderate to very high conductivity readings in Fields 18 and 20. There was an absence of lower readings, indicative of near surface gravel terraces/islands and/or gravel at shallow depths with thin overlying fine-grained deposits. A slightly higher gravel deposit was recorded in the north eastern corner of Field 20 but this was not distinguished in the EM survey. It is likely, based on the results of the borehole survey, that there would have been lower readings in Field 19 but the presence of dense woodland made testing this hypothesis unfeasible.

Discussion: Risk model

7.5.26 Using a combination of borehole and geophysical information, a series of deposit models were constructed for the study area for key stratigraphic interfaces within the study area: the top of Shepperton Gravel (i.e. Late Pleistocene palaeolandsurface); the top of the fine-grained minerogenic alluvial deposits encountered below the topsoils/subsoils and/or made ground, and; where available, the interface between minerogenic and organic alluvial deposits.

7.5.27 The Shepperton Gravel was observed at depths ranging from 1.55m to 3.90m BGL. The majority of Field 20 and the eastern half of Field 18 was characterised by gravel encountered at deep depths relative to the north-eastern corner of Field 20, the entirety of Field 19, and the western half of Field 18. Palaeochannels identified from lidar imagery suggests that a substantial channel existed running approximately north-south through Field 20. The relative depth of the gravel in this area tends to confirm this suggestion, as well as the significant organic-rich alluvial deposits, including peats (see below) (Figure 7.11).

7.5.28 The modelled upper surface of the Shepperton Gravel can also be viewed alongside the interpretation of valley floor deposits derived from the EM survey indicating sub-surface landscapes and the resulting potential for archaeological remains (see 3.1.9). The EM survey results correlated positively to the modelled borehole data with areas of moderate to high conductivity relating to coarse-grained sands and gravels and areas of high-very high conductivity relating to fine-grained, waterlogged sediments within palaeochannels and other features (Figures 7.12 and 7.13).

7.5.29 The thickness of fine-grained alluvial deposits, including both minerogenic deposits and organic alluvium ranged from 1.05 to 3.40m. The model broadly correlated positively to the depth of the gravel, as expected from mapped data. The exception to this is in Field 19 where limited data were available and the projected thickness of alluvial material is likely to be significantly thinner, based on the depth of the gravel. Deeper fine-grained deposits were confined to the eastern half of Field 18 and Field 20, crossing the field north-west to south-east in a broad band interpreted as infilling a significant palaeochannel (Figure 7.14).

7.5.30 Due to the presence of both substantial minerogenic and organic alluvium it was possible to model the interface between these two deposits. This interface was observed at depths ranging from 1.20m to 2.25m BGL.

7.5.31 The gravel terrace is present in the northeast of Field 20, the entirety of Field 19, and the western third of Field 18. This area is of higher archaeological potential, although the majority lies in the wooded area making up Field 19, reducing the potential for further evaluation at this stage.

7.5.32 A palaeochannel was located passing roughly north-west/south-east across Field 20. This was identified on both lidar images and EM survey and recorded as organic deposits during the borehole survey. This has lower potential for more traditional types of cultural archaeological remains but a higher potential for palaeoenvironmental preservation, with some possibility for surviving fish weirs, traps, and causeways, as well as general organic artefact preservation.

7.5.33 An area of low energy deposition covers the eastern two thirds of Field 18, with deeper alluvial deposits and lower dryland archaeological potential, but greater potential for preservation of palaeoenvironmental remains and organic archaeological deposits (Figure 7.15).

7.6 Summary and Conclusions

7.6.1 The Stage 1 evaluation provided little evidence for the presence of archaeological remains at Thorpe Hay Meadow, beyond the preserved wood already identified in preliminary ground investigations.

7.6.2 Survey opportunities were limited in Field 19 due to ground conditions (dense woodland cover). This area is likely to be of relatively high archaeological potential, being a probable area of gravel island adjacent to a palaeochannel and/or wetland area.

7.6.3 The remainder of the site, whilst of low dryland archaeological potential, is of very high palaeoenvironmental and wetland archaeological potential, with evidence for good preservation of organic deposits from the early Holocene.

7.6.4 The range-finder dating framework has demonstrated that the site has the potential to better understand the late Pleistocene-early Holocene landscape development within both the palaeochannel features and wider blanket of alluvium. In addition, these deposits may mask features of Mesolithic date which may include waterlogged wooden remains and former land-surfaces.

7.6.5 The limited macrofossil assessment demonstrates good preservation of seeds and insect remains. These deposits are likely to preserve microfossil remains and provide further material for absolute dating. The high organic content also suggests that any organic archaeological remains are also likely to be well preserved.

7.6.6 The scheme footprint will almost certainly impact the identified channel and higher gravel terraces and therefore this area is extremely palaeoenvironmentally and archaeologically sensitive.

8 Results: Abbey Meads, Chertsey

8.1 Introduction

8.1.1 The Chertsey Abbey Meads area was targeted for evaluation based on desktop analysis, which suggested it had high potential for the survival of both prehistoric and historic archaeological remains. In particular, the area is part of a historically-significant landscape due to its inclusion as part of the grazing lands of Chertsey Abbey. It was therefore investigated as part of Stage 1 evaluation.

8.1.2 This section comprises a brief introduction to the site, and describes the scope of Stage 1 evaluation. This is followed by: an archaeological and historical background (Section 8.2), research context (Section 8.3), and reports on the results of the various components of Stage 1 evaluation (Sections 8.4 to 8.6). A conclusion, with recommendations for further work, follows (Section 8.7).

Site location and scheme impact

8.1.3 The site comprises 23.4 hectares of level land, divided into seven fields; 22, 23, 24, 25, 26, 27, and 28 (Figures 8.1 and 8.2). These reflect modern land boundaries (which in turn largely reflect the route of the Burway Ditch, a seasonal watercourse).

8.1.4 The fields currently have a mixture of uses; Fields 22, 27, and 28 are scrub and woodland; Fields 23, 25, and 26 are rough grassland, currently used as cattle pasture; Field 24 is grassed and forms part of Chertsey Water Works.

8.1.5 The underlying geology of the site was the Bagshot Formation, consisting of sand, overlain by superficial deposits of Alluvium, consisting of clay, silt, sand, and gravel.

8.1.6 The proposed channel and associated habitat creation works will affect the whole of the Stage 1 evaluation area with the exception of Field 24. The channel will impact the area to a maximum depth of 1.8 metres, with much of the area impacted to shallower depths.

Fieldwork extent and constraints

8.1.7 Three forms of Stage 1 evaluation were carried out in this area: **geophysical survey**, **earthworks survey**, and **geoarchaeological survey** (both EM survey and borehole survey).

8.1.8 The forms of evaluation employed varied by field due to the differing land use and vegetation cover. Geophysical survey was undertaken in Fields 23, 24, 25, and 26. Fields 22, 27, and 28 were not suitable, being too heavily overgrown.

8.1.9 Earthworks survey was undertaken in Fields 22, 23, 25, 26 and 27. Fields 22 and 28 were not suitable, having significant vegetation cover.

8.1.10 EM survey was carried out in Fields 23, 25, and 26; Fields 22, 27, and 28 were not suitable, being too heavily overgrown.

8.1.11 Borehole survey was carried out in Fields 23, 25, and 26, and parts of Field 27; Fields 22 and 28, and the remainder of Field 27, were not suitable, being too heavily overgrown.

8.1.12 The evaluation as planned and as carried out in Fields 22, 23, 25, and 26 corresponded closely, with only minor alterations to the borehole layout made to accommodate vegetation. Field 24 was found to be heavily disturbed by modern activity during initial geophysical survey and no further work was carried out in this field. The borehole layout in Field 27 had to be heavily modified due to thick vegetation cover over much of the field.

8.2 Historic and archaeological background

Bronze Age

8.2.1 A possible Bronze Age barrow site is inferred from the field name Knighting Burrow Mead (Chertsey Tithe). This area has since been largely quarried but a few sherds of possible Bronze Age pottery were noted in a field visit.

Iron Age

8.2.2 A bronze shield was found in gravel extractions north-west of Chertsey.

Roman

8.2.3 A 1st century bronze patera (dish) is recorded from the Thames between Walton and Chertsey. It has also been suggested that a Roman road from London to Winchester might have crossed the Thames close to Chertsey and run through the later site of the Abbey and town, but there is no verifying evidence for this.

Early Medieval

8.2.4 The documentary evidence indicates a 7th century date for the founding of Chertsey Abbey, at 'a place called Cerotaesei that is Cerotus Island' (Bede, writing c. 750). Charters of the Abbey dating back to the 7th century also mention land holdings in Egham, Hythe and Thorpe. However, little physical evidence has come to light of the earliest phases of development and occupation of the Abbey. Early Medieval findspots comprise a mid- late Saxon iron spearhead and iron ferrule found in a garden along Bridge Road, Chertsey.

Medieval

8.2.5 The site of Chertsey Abbey is situated to the north of the town of Chertsey and dates from the 9th century. The abbey was dissolved and later demolished in the 16th century. The monument, which is divided into three areas, includes the Benedictine Abbey of St Peter, situated on the banks of Abbey River in the flood plain of the River Thames. The abbey is contained by a series of moats or ditches which define the inner and outer precincts and an area to the north of the Abbey River which contains an extension to the abbey's cemetery. The inner precinct contains the remains of the church and main claustral complex while the moated areas to the east and west contain the upstanding earthworks and buried remains of fishponds and water management systems, agricultural and associated monastic industry as well as fragments of upstanding monastic walls.

8.2.6 At Abbey Meads, Chertsey is a possible Medieval earthwork, previously believed to be a Roman fort, one of a number recorded in this vicinity.

8.2.7 A 14th century chapel, situated on the crest of St Ann’s Hill, survives mainly as low earthworks and buried foundations, although one wall remains standing to a height of 1.3m. The chapel may also once have been associated with nearby Chertsey Abbey. The George Inn, Chertsey dates to the late medieval period.

Post-Medieval

8.2.8 The site of Chertsey Bridge is a Grade II listed structure constructed in 1780-4. The town of Chertsey contains a high number of listed buildings, mostly clustered around the immediate south of the scheduled Abbey monument area. Much of the area appears to have been largely undeveloped prior to the 18th century, when the expansion of Chertsey began, initially centred on the area immediately around the Abbey monument. Sporadic designations continue along Bridge Road to the East towards Chertsey Bridge. Further south, along Guildford Street, the 19th century train station is listed with 8 further 18-20th century designated properties nearby.

8.3 Research Context

8.3.1 The relevant research framework for the evaluation work at this site is:

- *Surrey Archaeological Research Framework* (Bird 2006)

8.3.2 Research themes identified from the above framework are detailed below in chronological order.

8.3.3 **Saxon**
Communications*: Do Hythe names like those at Chertsey indicate transport along the Thames?*

8.3.4 **Medieval**
Political and administrative geography
Key Issue: *the location and recording of early boundary earthworks*.

Land use and environment
Key issue: *is land close to river and streams nearly always more valuable than land further up the hillsides?*

There is a need for study on the effect on the landscape of religious houses (including water control)

8.3.5 It may be possible to further investigations into the location and recording of early boundary earthworks through further investigation into earthworks identified during Stage 1 survey at Chertsey Abbey Meads, although it currently seems likely that the majority of these are post-medieval in date. Trial excavation will also provide the opportunity to further investigate a monastic landscape.

8.4 Results: Geophysical Survey

Introduction

8.4.1 Fields 23, 24, 25, and 26 were surveyed, using the methodology outlined in Section 2.4 above. A full report on the results of this survey was produced by SUMO Services (Gater, 2017a).

Results

8.4.2 No magnetic responses were recorded that could be interpreted as being of archaeological interest (Figure 8.2). A few distinctive linear trends were noted, probably related to former land divisions or other recent agricultural activity (for example land drains).

8.4.3 Amorphous responses in the data in Fields 23, 25 and 26 are typical of magnetic responses on alluvial soils. They represent differing periods of flooding, earlier channels and water courses.

8.4.4 The whole of Field 24 is magnetically disturbed; there are buried services and the site is used as a works compound.

8.4.5 Linear bands of ferrous disturbance along the southern limits of Fields 23 and 26 are a result of the construction easement for the adjacent M3 motorway.

8.4.6 Other ferrous responses close to boundaries are due to adjacent fences and gates. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data and their form is best illustrated in the XY trace plots. These responses are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil and are commonly assigned a modern origin. Only the most prominent of these are highlighted on the interpretation diagram.

Conclusion

8.4.7 The geomagnetic survey did not identify any responses of archaeological interest. The results are dominated by natural alluvial responses and areas of magnetic disturbance (associated with a works compound and the M3 motorway). Several linear trends of uncertain origin were noted, but are likely to be of modern agricultural origin.

8.5 Results: Earthworks Survey *Rowan May*

Introduction

8.5.1 An earthworks survey of Chertsey Abbey Meads was undertaken on the 20th March 2017 (Figure 8.4).

8.5.2 Features identified from lidar and the survey have been given three-figure identification numbers, starting with 101. The full survey gazetteer can be found in Appendix 2.

8.5.3 Comparison of lidar data and features visible on the ground indicated that many of the features depicted on the lidar are too ephemeral to be visible as earthworks to the eye. Weather conditions during the survey were largely cloudy with some heavy rain, this not being ideal visibility for earthwork features, though it is considered that the inspection was sufficiently detailed to record earthworks of 0.1m and greater height or depth.

Area 1 (Fields 23-27)

8.5.4 This area of fairly level, undulating ground was under pasture at the time of survey, with short grass covering most of the area. A series of stream and drainage channels crosses the site, all dry at the time of survey. Most of these channels have trees and scrub vegetation growing within them (Plate 1a). The channels vary between 4m and 2m wide at the top, largely with U-shaped bases and between 0.4m and 1m deep. Most are between 3-4m wide and 0.5-1m deep, with the one narrower, shallower feature (103) being a drainage ditch rather than a stream.

8.5.5 The main northwest-southeast aligned channel (101) is shown on current OS mapping as the Burway Ditch, which feeds into the Abbey River to the south of the M3. Three drainage ditches feed off this feature, two of which (102, 104) also connect to the Abbey River to the south. The third, the smaller feature 103, feeds into one of drainage channel 104. The Burway Ditch and all the drainage channels are shown on the 1870s OS map, where they appear to have functioned as field boundaries as well as drainage.

8.5.6 Two concrete abutments are visible along the Burway Ditch at the northern side of Area 1 (Fields 23-27) (feature 115). These are likely to be the remains of a former bridge over the channel. Lidar data and slight earthworks on the ground show a wide area of slightly lower ground running around the eastern end of the Burway Ditch and heading southwest across Area 1. These earthworks appear to be part of the natural landform and probably indicate the route of a former watercourse (feature 117).

8.5.7 Lidar data shows a series of narrow linear 'ridge and furrow'-style features in three distinct alignments (features 109, 113 and 118), separated by the Burway Ditch and drainage ditches (see Figure 8.4). On the ground, these features largely proved to be too low to clearly identify. The exception is in the area to the north of the Burway Ditch (109), where three very slight ridges were recorded, standing to a maximum height of 0.1m.

8.5.8 Two slight scarps (108, 110) were also recorded in this area, sloping down to the east and south of the area of ridges shown on lidar, and possibly marking the edge of a field. These scarps or lynchets have a maximum height of 0.2m. Two very faint possible furrows were recorded in the area to the south of the Burway Ditch (113), with no obvious associated ridges. No ridge or furrow features were recorded in the southwest part of Area 1 (Fields 23-27). Given the low-lying nature of the ground and the regularity and relatively narrow spacing of the features visible on lidar (118), it is possible that these features relate to water meadows or field drainage rather than ridge and furrow cultivation.

8.5.9 Two slight possible trackways or hollowways were recorded towards the western side of Area 1 (Fields 22-27). Feature 106 is aligned northwest to southeast, and is up to 0.6m wide. This may be a relatively modern footpath and is difficult to see in places on the ground, though clearly visible on the lidar. It is visible to a maximum depth of 0.3m. Feature 107 is more ephemeral, again being clearer on the lidar. It is aligned east to west, with the area visible as a slight earthwork forming part of a larger system of sinuous hollows. It is unclear whether it originated as a braided hollowway or relates to natural drainage. Where visible as an earthwork, it is up to 1m wide and 0.15m deep.

8.5.10 A more substantial embanked trackway runs along the southern edge of Area 1 (Fields 22-27) (feature 114). This is a raised, levelled trackway up to 2.2m wide and 0.3m high. It runs roughly parallel with the M3 to the south and is not shown on historic mapping. Modern mapping labels a conveyor in this area, and it is probable that it was associated with the gravel pit to the west.

8.5.11 Two small, roughly oval hollows were recorded in the south-central part of Area 1 (features 111 and 112). These are 4m by 2m and 5m by 3m in extent, respectively, and up to 0.2m deep. They are of uncertain function or origin. A semicircular bank (feature 116) is located to the immediate west of drainage channel 115. It is 5m in length, up to 2.5m wide and up to 0.8m high. Again, this is of uncertain function, and may be of relatively recent origin.

Discussion Area 1 (Fields 22-27)

8.5.12 The earthworks in Area 1 (Fields 22-27) are largely very faint and ephemeral, with most being clearer on lidar than on the ground. The majority of features appear to relate to either field drainage or possible water meadows, though post-medieval ridge and furrow cultivation cannot be ruled out. The slight ridges of feature 113 continue to the south of the M3, between two drainage channels. The areas covered by the ridges appear to relate to fields shown on 19^{th}-century mapping.

8.5.13 A possible palaeochannel crosses Area 1 (Fields 22-27) from east to west, probably related to a former watercourse or floodplain pre-dating the available historic mapping. The palaeochannel is crossed by the faint linear ridges of feature 113, which clearly post-date it. The embanked trackway along the southern side of Area 1 probably relates to modern quarrying activity.

8.5.14 There is no evidence on the lidar or on the ground for the square enclosure feature recorded on the SMR (SMR feature 123). It is probable that this feature was wrongly located in its original record. It is notable that an earthwork forming a stock enclosure of possible medieval date is located to the northeast of the survey area, within Laleham Burway golf course (Scheduled Monument NHLE1005949).

Area 2 (Field 22)

8.5.15 Fields 22 is located at the southwest corner of the site and is currently covered with young trees and scrub vegetation. The ground in this area is relatively level, and no earthwork features are visible on the ground. The only feature shown on the lidar is a continuation of the embanked trackway 114 recorded in Area 1 (Fields 22-27); this is not clear as an earthwork on the ground. It is likely to be associated with the gravel pits, now lakes, to the north and east, rather than to the historic route of Monks Walk which crosses this part of the site (SMR feature 178). There is no sign of any features associated with possible stock enclosures recorded in the SMR (SMR 118, 132).

8.6 Results: Geoarchaeological Survey *Tom Keyworth and Andy Howard*

Topographic and Geological Background

8.6.1 Chertsey Abbey Meads (centred on TQ 0493 6747), referred to as Chertsey from this point forward in the text, is located on the outside of a slight meander of the River Thames, immediately to the south-east of Laleham Golf Course. Like Laleham, Chertsey is located on an island known as the Laleham Burway. The BGS mapping indicates the mineral resources correlate with the Shepperton Gravel Member. To the west of the site there is a restored gravel pit lake; Chertsey Water Works lies to the north; the River Thames borders the site to the east; and the M3 motorway to the south. Several streams and field drains dissect the site, providing the boundaries for four fields (Fields 23, 25, 26 and 27). Current land-use comprises gentling undulating but generally flat pastoral grassland (Figure 8.5).

8.6.2 **Chertsey: EM survey methodology**

An EM survey was carried out in advance of the borehole survey at Chertsey across Fields 23, 25, and 26. The EM survey measures electrical resistance (conductivity) through sediments, which are affected by groundwater conditions and geological textural variations. The EM survey therefore can provide information on the character of buried sediments and landform features such as palaeochannels, gravel islands and terrace edges. By relating conductivity to the sediment types recorded during the borehole survey, it is possible to ground truth the results of the EM survey.

Chertsey: Window sample methodology

8.6.3 In total twenty-six window-sample boreholes were sunk. The boreholes were spaced 75-100m apart and every effort was made to provide an even coverage across the sites.

Field 23

8.6.4 Field 23 was located in the west of the area with the Burway watercourse flowing along the northern and eastern boundaries. The western boundary was a public footpath and to the south was the M3 motorway. In total, seven boreholes were drilled.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
CHEWS01	504474.017	167450.236	12.299	5.00	7.30
CHEWS02	504596.012	167605.436	12.28	2.00	10.28
CHEWS03	504573.091	167505.156	12.137	3.00	9.14
CHEWS04	504553.087	167421.531	12.401	3.00	9.40
CHEWS05	504697.069	167506.409	11.869	3.00	8.87
CHEWS06	504676.748	167422.323	12.009	3.00	9.01
CHEWS08	504782.611	167460.137	11.989	3.00	8.99

Table 8.1 Location and depth of window samples recorded at Field 23, Chertsey.

Field 25

8.6.5 Field 25 was the northernmost field drilled at Chertsey. The southern boundary was defined by the Burway watercourse, the north-western boundary borders Field 24, and the north-eastern boundary runs parallel to the River Thames. In total, ten boreholes were drilled.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
CHEWS07	504807.281	167562.101	12.244	2.00	10.24
CHEWS09	504917.73	167612.312	12.145	2.00	10.15
CHEWS10	504900.272	167526.096	11.958	2.00	9.96
CHEWS13	505023.145	167632.007	12.099	2.00	10.10
CHEWS14	505013.28	167583.111	12.011	2.00	10.01
CHEWS15	504995.815	167496.829	11.346	3.00	8.35
CHEWS18	505112.916	167547.883	12.096	2.00	10.10
CHEWS19	505097.793	167468.858	11.5	2.00	9.50
CHEWS22	505195.044	167452.109	11.637	2.00	9.64
CHEWS25	505277.594	167379.881	12.164	2.00	10.16

Table 8.2 Location and depth of window samples recorded at Field 23, Chertsey.

Field 26

8.6.6 Field 26 was the central southern field at Chertsey. The western and northern boundaries were defined by the Burway watercourse with an unnamed drain defining the eastern boundary; the M3 motorway was located immediately to the south. In total, six boreholes were drilled.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
CHEWS11	504877.351	167425.939	11.478	2.00	9.48
CHEWS12	504857.159	167342.071	12.003	2.00	10.00
CHEWS16	504972.908	167396.724	11.9	2.00	9.90
CHEWS17	504952.671	167312.833	11.698	2.00	9.70
CHEWS20	505074.851	167368.744	11.456	3.00	8.46
CHEWS21	505056.528	167292.444	11.858	3.00	8.86

Table 8.3 Location and depth of window samples recorded at Field 23, Chertsey.

Field 27

8.6.7 Field 27 was located in south-east corner of the site. The northern boundary was defined by the Burway watercourse, to the east the River Thames, to the south was the M3 motorway, and the western boundary was an unnamed drain. In total, three boreholes were drilled.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
CHEWS23	505172.112	167351.973	11.354	2.00	9.35
CHEWS24	505136.054	167290.066	11.764	3.00	8.76
CHEWS26	505264.988	167295.95	11.298	2.00	9.30

Table 8.4 Location and depth of window samples recorded at Field 27, Chertsey

Results: EM survey

8.6.8 The EM results of the survey data were zoned into areas of high, moderate, and low conductivity (Figure 8.6).

8.6.9 Areas of high conductivity were largely located in Field 23, the western extent of Field 26, centrally to the south in Field 25 as well as to the east. Moderate areas largely made up the interface between general areas of high conductivity to the west and centre of the site and the low conductivity areas to the north-west and south / south-east of the site. The level of conductivity provides an indication of site geomorphology and sediment type (Figures 8.7 to 8.8). This has then been used to highlight archaeological potential (Figure 8.9).

Results: stratigraphy

8.6.10 The stratigraphy interpreted from the borehole survey at Chertsey consisted of two discrete broad sequences. Firstly, clay silt topsoil and subsoil (0.20-0.90m in thickness) overlying sandy silt minerogenic alluvium (0.10-1.90m in thickness), in turn resting upon Shepperton Gravel at depths of 0.40-2.80m BGL; this broad sequence was confined to the majority of Field 25 (bar CHEWS14 and 15), the central part of Field 26 (observed in CHEWS12, 16, and 17), and Field 27 (bar CHEWS24) (Figure 8.10).

8.6.11 Secondly, clayey silt topsoil and subsoil (0.45-0.75m in thickness) overlying sandy silt minerogenic alluvium (0.95-1.19m in thickness), which became an organic silt-sand, with peat (0.76-0.80m in thickness), observed exclusively in Field 23 (CHEWS03, 05, and 08); this in turn, rested upon Shepperton Gravel at depths of 2.30-3.35m BGL, (Figure 8.11).

8.6.12 The deep deposits recorded in CHEWS15 are clearly associated with a palaeochannel, which has been re-purposed as the Burway Drain. The infilling alluvium was highly organic although it became silt dominated with depth. The lidar demonstrates a dendritic channel formation within this area and it is likely that the alluvial deposits may mask several smaller channel features. This area is likely to reflect complex fluvial changes which are difficult to distinguish with such widely spaced boreholes. (Figure 8.12).

8.6.13 The high silt content also suggests greater water flow than was recorded within other channels along the proposed route, such as Thorpe Hay Meadow (Section 7.5). This may be due to periodic channel migration and reactivation, although information to corroborate such a hypothesis will only be visible in open sections.

Results: samples

8.6.14 In total, five boreholes were sampled for organic remains. Samples taken from WS01, WS05, and WS03 related to the area of lower lying marshy ground where peat accumulations were encountered. The samples for the sequence taken from WS15 are likely to relate to a palaeochannel.

Window Sample	Sample Depth (m BGL)	Sample ID	Field	Window Sample	Sample Depth (m BGL)	Sample ID	Field
CHEWS01	2.75	35	23	CHEWS15	2.60	44	25
CHEWS01	2.30	36	23	CHEWS15	1.70-1.80	45	25
CHEWS05	1.80	37	23	CHEWS15	2.20	46	25
CHEWS05	1.70	38	23	CHEWS15	1.90	47	25
CHEWS03	2.20	39	23	CHEWS15	2.80	48	25
CHEWS15	2.40	40	25	CHEWS15	2.30	49	25
CHEWS15	1.80-2.00	41	25	CHEWS15	2.50	50	25
CHEWS15	3.60-3.80	42	25	CHEWS15	2.40	51	25
CHEWS15	2.70	43	25	CHEWS24	2.40	52	27

Table 8.5 Samples taken for environmental analysis from Chertsey.

Results: macrofossil assessment

8.6.15 A single sample was processed for macrofossil assessment from WS15 3.60mbgl. The samples demonstrated moderate to good preservation of plant macrofossil and insect remains as well as molluscs and ostracods. A full report can be found in Appendix 3.

Results: radiocarbon dating

8.6.16 A total of five samples from four boreholes were submitted for age determination. The peat sample recovered from WS05 was located in the middle of organic fine-grained alluvium, 0.50m above the Shepperton Gravel. The peat sample recovered from WS08 was located at the boundary between the mineralised and organic fine-grained alluvium 0.60m above the Shepperton Gravel. Both samples produced early Holocene (Early Mesolithic) dates (Figure 8.13).

8.6.17 The upper sample from WS15, from the top of the suspected palaeochannel, provided a Late Bronze Age date, some 0.95m above the Shepperton Gravel. The lower sample, from the bottom of the palaeochannel and directly above the Shepperton Gravel at 2.75m BGL, produced an Early to Middle Bronze Age date. This date inversion may be explained by the complex network of channels present in the area. The introduction of younger material into older deposits via fluvial reworking or deep root penetration from species such as *Phragmites* may also be a factor. The fraction selected for dating should also be considered, as humic acids are more mobile within organic sediments than the humin component. The material from this site requires further work to better understand the chronologies.

8.6.18 The sample taken from WS24, which is located at the junction of the Burway Drain and the main course of the Thames, was taken from directly above the Shepperton Gravel at 2.40m BGL (SUERC-76752). This again returned a Middle Bronze Age date.

8.6.19 The range-finder chronology has demonstrated that significant fluvial activity was underway during the Mesolithic and Middle Bronze Age in this area. However the complex web of channels shown in the lidar data demonstrates that the need for more detailed palaeoenvironmental analysis in order to better understand the landscape evolution in this area.

Window Sample	Sample Depth (m BGL)	Sample ID	Field	Lab code	Sample	Radiocarbon Age	Calibrated age 95% confidence
CHEWS05	1.80	01	23	SUERC-76745	Peat humic acid	8951 ± 32 BP	8264 to 8169 cal BC and 8118 to 7974 cal BC
CHEWS08	2.20	02	23	SUERC-76746	Peat humic acid	9005 ± 32 BP	8290 to 8207 cal BC and 8031 to 8086 cal BC
CHEWS15	1.80-2.00	04	25	SUERC-76748	Organic Alluvial Silt humic acid	3119 ± 32 BP	1919 to 1744 cal BC
CHEWS15	3.60-3.80	03	25	SUERC-76747	Organic Alluvial Silt / Wood humic acid	3505 ± 32 BP	1451 to 1288 cal BC
CHEWS24	2.40	05	27	SUERC-76752	Organic Alluvial Silt humic acid	3471 ± 32 BP	1886 to 1735 cal BC and 1717 to 1694 cal BC

Table 8.6 Sub-samples taken for radiocarbon dating from Chertsey.

Discussion: deposits

8.6.20 The EM survey characterised the site into two broad areas: high conductivity to the south and southwest of the site reflecting areas of alluvium and/or palaeochannels; areas of moderate conductivity representing floodplain-terrace gravel interface. To the north and north-east of the site there were areas of lower resistance likely reflecting zones of shallow sand and gravel, surrounded by areas of moderate conductivity and further floodplain-terrace gravel interfaces (Figure 8.14). The north-eastern and southern limits of the site are characterised by interference relating to buried services.

8.6.21 The subsequent borehole survey revealed areas of shallow gravel in the north, east and central-southern parts of the site. A palaeochannel system was identified running approximately east-west centrally across the site with areas of low-lying and previously waterlogged land to the west, as indicated by peat accumulation (Figure 8.10 and 8.13).

8.6.22 The range-finder chronological framework demonstrates that the channel and associated alluvial deposits have the potential to provide information regarding the landscape evolution of the area during the Mesolithic and Middle Bronze Age. The complex nature of the channel system at Chertsey has been demonstrated by the inversion of the age determinations returned from WS15. It is likely that given the dendritic planform of the channel system recorded in the lidar data, the area has been subject to significant periods of change via fluvial reworking and channel reactivation. It is only through more detailed palaeoenvironmental analysis that such activity can be understood.

8.6.23 The small bulk sample demonstrated good preservation of macrofossil remains and it is likely that microfossil remains will also be similarly well-preserved.

Discussion: risk model

8.6.24 Using a combination of borehole and geophysical information, a series of deposit models were constructed for the study area for key stratigraphic interfaces: the top of Shepperton Gravel (i.e. Late Pleistocene palaeolandsurface); the top of the fine-grained alluvium and/or made ground, and; where available, the interface between minerogenic alluvial deposits and organic alluvial deposits.

8.6.25 The gravel was encountered at the shallowest depths in the west, northwest, and southeast of Field 25 as well as the west of Field 27 (Figure 8.15). This correlated generally with shallow gravel to the northeast of the site gradually increasing in depth towards the southwest. The deeper gravels were limited to the south-western corner of the site, in Field 23 and the south-western corner of Field 26. There was an area of deeper gravel in the south-eastern corner of Field 26 and the south-western corner of Field 27. The only isolated example of an area of deeper gravels amongst relatively shallow areas was from borehole CHEWS15 which corresponds to a palaeochannel.

8.6.26 The zones interpreted as fine-grained alluvium from the EM survey data broadly correlated positively with areas of deeper gravel, with the exception of the south-east of Field 25 where shallow gravels were encountered in the borehole survey. It is likely that this anomaly in Field 25 is a result of interference from buried modern services, producing artificially high resistance readings. Zones interpreted as terrace sands and gravels correlated positively with areas where gravel was encountered at shallow depths, with the exception of CHEWS06 in the south-eastern corner of Field 23. Zones interpreted as palaeochannels negatively correlated in areas to the north of Field 25, where very shallow gravel was encountered, but correlated positively with areas of deep gravel in Field 25 as observed in CHEWS15.

8.6.27 The thickness of the combined minerogenic and organic alluvium broadly mirrors the topography of the upper surface of the Shepperton Gravel. Substantial thicknesses of alluvium, including organic-rich sediments, were mainly confined to the south and south-west of the site, correlating with areas of deeper gravels. Areas of thin inorganic alluvium were confined to the north and north-east of the site.

8.6.28 The modelled thicknesses of the organic alluvium provide a different picture to modelled thicknesses of the fine-grained minerogenic alluvial deposits. Areas where no organic sediments were observed broadly correlate positively to areas of shallow depths of Shepperton Gravel. The exception to this pattern is the central and southern area of Field 26 and the south-eastern corner of the site. The areas of thicker and more substantial alluvial deposits correlate with palaeochannels identified from lidar imagery, with the exception of the southeast of Field 25 and the central and eastern portions of Field 27 to the southeast of the site.

8.6.29 A variety of alluvial deposits were identified at Chertsey with radiocarbon dating suggesting that sediment accumulation extends back into the Mesolithic and Bronze Ages. Field 23 contained a significant thickness of organic rich sediment suggesting long term wetland conditions prevailed as part of a mosaic wetland environment. Whilst rich in environmental remains, no subsurface cultural remains were identified but it is likely that such remains may be preserved within both the palaeochannels and floodplain deposits (Figure 8.16).

8.7 Summary and Conclusions

8.7.1 Stage 1 evaluation has demonstrated that a complex fluvial landscape is represented by the area at Chertsey. The lidar and cartographic data suggest that at least one major channel is present at the site. The borehole spacing is too coarse to understand the more subtle and perhaps smaller channel features which may also be present within the floodplain deposits.

8.7.2 The geophysical survey provided very little in the way of useful information which is likely due to the depth of alluvium rather than an absence of archaeological remains. The EM survey also produced a puzzling picture with areas of organic accumulation recorded in the subsequent borehole survey that were not evident in the conductivity readings. The main channel was able to be mapped and indicated that the Burway Drain is likely to have also been a channel which at some point was re-profiled as a drain.

8.7.3 It is likely that the gravel island / terrace at Laleham (Section 9) extends to the north / north-west of Chertsey. The areas that lie in between – the Chertsey Water Works and reservoir as well as Field 24 were not subject to EM or borehole survey (due to heavy disturbance, and the fact that they lie outside the impact zone of the RTS) meaning this relationship cannot be firmly established. It is highly probable that the water works were located on a point of prominence within the floodplain to avoid inundation from seasonal flooding and that therefore this is a gravel terrace. The earthworks recorded at Laleham demonstrate the high potential for human activity within the higher areas of the floodplain.

8.7.4 The organic deposits recorded during the borehole survey demonstrate accumulation both within the wider floodplain wetland and the main palaeochannel to be occurring during the Mesolithic and Middle Bronze Age. The inversion of the dates from within the main channel suggests more work is required in order to understand the nature of the deposits infilling the channel. It is likely that periodic reworking or channel reactivation is responsible for the error in the dating framework, this can only be resolved through high resolution palaeoenvironmental analysis. The deposits recorded here have a high potential to preserve palaeoenvironmental remains as well as wooden/organic archaeological remains

8.7.5 In general, the area of Chertsey Abbey Meads is of high archaeological potential; for settlement activity on the higher areas, for seasonal activity in the lower-lying wetland areas between the palaeochannels, and for palaeoenvironmental remains and preserved wood within the channels.

9 Results: Laleham Golf Course, Chertsey

9.1 Introduction

9.1.1 The site of Laleham Burway Golf course lies within an area considered to be of High Archaeological Risk based on the presence on the site of an earthwork enclosure designated as a Scheduled Monument (Scheduled Monument 10005949). It was therefore investigated as part of Stage 1 evaluations.

9.1.2 This section comprises a brief introduction to the site and describes the scope of Stage 1 evaluation. This is followed by: an archaeological and historical background (Section 9.2), research context (Section 9.3), and reports on the results of the various components of Stage 1 evaluation (Sections 9.4-9.6). A conclusion, with recommendations for further work, follows (Section 9.7).

Site location and scheme impact

9.1.3 The site comprises approximately 33.7 ha, covering most of the Laleham Burway Golf Course along with fields to the west, and is located 1km north of Chertsey. The area was divided into four fields; Fields 33 to 36 (Figure 9.1).

9.1.4 Fields 33 and 34 had been extensively impacted by aggregate extraction and Field 35 was inaccessible scrub and grassland surrounded on all sides by water. Field 36 formed the majority of the former Laleham golf course, now closed, and has been extensively landscaped as such.

9.1.5 The underlying geology of the site comprises the Bagshot Member to the south and the Claygate Member to the north. These are overlain by a gravel island of Shepperton Gravel overlain by a veneer of fine-grained alluvium to the north.

9.1.6 The area will be variously impacted by habitat creation: an access route will be created from the north, with a new bridge crossing the Abbey River into Field 35. A compound area will be created in the north of this field, with a potential future visitor car park on this site. A visitor centre is proposed to the south of Field 35. An access bridge will lead into the south of Field 36. Here, a shallow open water zone will be created, involving ground reduction of up to 3.5 metres. To the north of this, and extending to the southern corner of the Scheduled Monument, an area of flood plain grazing marsh will be established, involving ground reductions of up to 2.7 metres. Impact to the north will be less; restricted to landscaping to remove golf course features to make the land suitable for grazing.

Fieldwork extent and constraints

9.1.7 Three forms of Stage 1 evaluation were carried out at Laleham: **geophysical survey**, **earthworks survey**, and **geoarchaeological survey** (both EM and borehole survey).

9.1.8 Earthwork and geophysical surveys were carried out in Field 36. Field 35 was inaccessible due to being surrounded on all sides by unbridged running water. In addition the levels of vegetation in Field 35 made geophysical survey and EM survey impossible. Fields 33 and 34 were included in the earthworks survey but on investigation were deemed to have been heavily impacted by modern quarrying activity and evaluation was not further progressed.

9.1.9 The window sample survey was designed to avoid the Scheduled Ancient Monument and boreholes were located in order to corroborate the EM survey data.

9.2 Historic and Archaeological Background

Bronze Age

9.2.1 A possible Bronze Age barrow site is inferred from the field name Knighting Burrow Mead (Chertsey Tithe). This area has since been largely quarried but a few sherds of possible Bronze Age pottery were noted in a field visit.

Iron Age

9.2.2 A bronze shield was found in gravel extractions north-west of Chertsey.

Roman

9.2.3 A 1st century bronze patera (dish) is recorded from the Thames between Walton and Chertsey. It has also been suggested that a Roman road from London to Winchester might have crossed the Thames close to Chertsey and run through the later site of the Abbey and town, but there is no verifying evidence for this.

Early Medieval

9.2.4 The documentary evidence indicates a 7th century date for the founding of Chertsey Abbey, at 'a place called Cerotaesei that is Cerotus Island' (Bede, writing c. 750). Charters of the Abbey dating back to the 7th century also mention land holdings in Egham, Hythe and Thorpe. However, little physical evidence has come to light of the earliest phases of development and occupation of the Abbey. Early Medieval findspots comprise a mid- late Saxon iron spearhead and iron ferrule found in a garden along Bridge Road, Chertsey.

Medieval

9.2.5 The site of Chertsey Abbey is situated to the north of the town of Chertsey and dates from the 9th century. The abbey was dissolved and later demolished in the 16th century. The monument, which is divided into three areas, includes the Benedictine Abbey of St Peter, situated on the banks of Abbey River in the flood plain of the River Thames. The abbey is contained by a series of moats or ditches which define the inner and outer precincts and an area to the north of the Abbey River which contains an extension to the abbey's cemetery. The inner precinct contains the remains of the church and main claustral complex while the moated areas to the east and west contain the upstanding earthworks and buried remains of fishponds and water management systems, agricultural and associated monastic industry as well as fragments of upstanding monastic walls.

9.2.6 A Scheduled earthwork enclosure lies within the northern half of the site (Scheduled Monument 1005949). This was once thought to be a Roman marching camp, but is now thought more likely to be a stock enclosure, perhaps related to Chertsey Abbey and the Abbey Meads. Faint remnants of ridge and furrow visible on lidar survey do appear to be cut by the earthwork, although earthworks survey conducted as part of the current investigations concluded that the form of the earthworks matched well with that of a Roman marching camp (see Section 9.5 below).

9.2.7 The earthworks at Chertsey Abbey Meads were investigated as part of the preliminary stages of the current evaluations. The full results of these investigations are to be found as Appendix 2 of the GWSI (Davies et al 2017). In summary, significant earthworks were noted on the south east side of the site. These included drainage features, the remains of old river channels, a small area of possible ridge and furrow, two slight possible trackways or hollow ways, and one more substantial embanked trackway probably relating to recent gravel quarrying to the west. Two small hollows and a semicircular bank were also noted; these were believed to be of recent origin.

9.2.8 A 14th century chapel, situated on the crest of St Ann's Hill, survives mainly as low earthworks and buried foundations, although one wall remains standing to a height of 1.3m. The chapel may also once have been associated with nearby Chertsey Abbey. The George Inn, Chertsey dates to the late medieval period.

Post-Medieval

9.2.9 The site of Chertsey Bridge is a Grade II listed structure constructed in 1780-4. The town of Chertsey contains a high number of listed buildings, mostly clustered around the immediate south of the scheduled Abbey monument area. Much of the area appears to have been largely undeveloped prior to the 18th century, when the expansion of Chertsey began, initially centred on the area immediately around the Abbey monument. Sporadic designations continue along Bridge Road to the East towards Chertsey Bridge. Further south, along Guildford Street, the 19th century train station is listed with 8 further 18-20th century designated properties nearby.

9.3 Research Context

9.3.1 The relevant research framework for the evaluation work at this site is:

- Surrey Archaeological Research Framework (Bird 2006)

9.3.2 Research themes identified from the above framework are detailed below in chronological order

9.3.3 **Medieval**

Political and administrative geography

Key Issue: *the location and recording of early boundary earthworks*.

Land use and environment

Key issue: *Is land close to river and streams nearly always more valuable than land further up the hillsides?*

There is a need for study on the effect on the landscape of religious houses (including water control).

9.3.4 It may be possible to further investigations into monastic landscapes, and into boundary earthworks, through future work at Laleham golf course; initial investigations have demonstrated that earthworks survive at the site and are reasonably well preserved.

9.4 Results: Geophysical Survey

Introduction

9.4.1 The geomagnetic survey was carried out in Field 36 only (Figure 9.2). It covered the majority of the area, with the exception of several discrete areas with heavy vegetation cover. A full report on the results of this survey was produced by SUMO Services (Gater, 2017e).

Results

9.4.2 Linear anomalies correspond to the enclosure earthwork which forms the Scheduled Monument. These are both magnetically weak and discontinuous, reflecting past plough damage and landscaping for the golf course.

9.4.3 Small pit-like anomalies and a few trends within the enclosure were noted in physical association with the Scheduled Monument (Figure 9.3). However, a positive archaeological interpretation could not be made; an origin as an effect of the underlying gravel is considered just as likely.

9.4.4 Several linear trends were detected; these are of uncertain origin, most probably deriving from past agricultural activity or the laying out of the golf course, although they could also be natural.

9.4.5 Former field boundaries shown on early edition OS mapping were detected; these are generally fragmented due to plough damage and more recent landscaping.

9.4.6 The dataset is generally magnetically “quiet” which reflects the deposits of alluvium across the site. A number of areas show responses typical of those caused by pockets and spreads of magnetically enhanced gravel soils. They can be difficult to distinguish from the numerous areas of magnetic disturbance (see below) with which they overlap.

9.4.7 Areas of magnetic disturbance were detected throughout the survey area. These can generally be attributed to golf course features and landscaping. Former buildings are shown on historic OS maps (1914 and 1940 respectively) and account for some of the anomalies; others may be a result of the gravel deposits.

9.4.8 A pipe was identified in the extreme south of the survey area.

9.4.9 Relatively large ferrous anomalies across the dataset are due to existing or former golf course features (greens, bunkers etc.). Ferrous responses close to boundaries are due to adjacent fences and gates. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data. These responses are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil and are assigned a modern origin.

Conclusion

9.4.10 The survey identified parts of the Scheduled earthwork but did not reveal any internal or external detail which would add to the interpretation of the feature. Several anomalies within the enclosure are probably natural, but may be of interest given the context.

9.4.11 Fragments of former field boundaries were detected. Elsewhere, the dataset shows pockets of responses from gravel deposits and both past and present golf course features, as well as a substantial ferrous pipe running east-west along the southern boundary of the site.

9.5 Results: Earthworks Survey *Laura Strafford*

9.5.1 The earthworks survey was undertaken on the 3-5th July 2017. A comparison of lidar data, historic maps and features visible on the ground indicated that many of the features depicted on the lidar and on historic maps are too ephemeral to be visible as earthworks to the eye. Ground conditions during the survey were dry underfoot, with vegetation being knee to waist height, with high potential to obscure discrete features. Weather conditions during the survey were dry with bright sunshine. The aim of the walkover survey was to assess the general aspect, character, condition and setting of the site; to identify any potential archaeological features not evident from secondary sources; and to ascertain potential visual impacts on designated assets within the survey area.

9.5.2 The earthworks identified from the lidar data, historic maps and the walkover survey are shown on Figure 9.4. Features identified from lidar and the survey were given three-figure identification numbers, starting with 201. The full survey gazetteer can be found in Appendix 2.

9.5.3 The survey area was covered in tall grass with pockets of dense tree vegetation and was bounded on all four sides by drainage ditches, all of which were dry at the time of survey. These were difficult to access in places due to dense vegetation within/around them.

9.5.4 The northern boundary was formed by Feature 214 (Plate 1b), a meandering, roughly aligned east to west ditch which flows into the River Thames to the east. This is marked as part of the Burway Ditch on both historic and modern OS mapping. At the western end of the northern boundary ditch, a return to the south was present, again meandering. The dimensions of the ditch were fairy uniform throughout, measuring between 3 and 6m wide at the top, with steep sides, and a depth of 1.2m. Historic and modern OS maps show that the Burway Ditch runs the entire length of the western site boundary, although it was not visible on the ground for the entire length due to heavy vegetation cover which obscured access to it (Plate 2b). As such, the part of the ditch which it was not possible to access has been given an individual feature number, 219.

9.5.5 At the eastern end of the site, the north-east to south-west aligned boundary ditch (217) (Plate 3b) measured approximately 3m in width at the top, with gently sloping sides and a depth of approximately 0.65m. This was very straight in comparison to the northern and western drainage ditches (214). The southern site boundary (218) (Plate 4b) was a meandering ditch, measuring approximately 4m in width at the top with gently sloping sides and a depth of approximately 0.5m. This is also labelled as Burway Ditch on both historic and modern OS maps, although it could not be traced all the way to meet with 219/214 due to dense vegetation in the south-western corner of the site.

9.5.6 Drainage ditches 214 and 218 were similar in their meandering form, suggesting that they are natural in origin, whilst the eastern site boundary of 217 was very straight, suggesting a more artificial form.

9.5.7 A number of field boundaries present on historic OS maps are clearly identifiable on lidar data. These include features 201, 204, 205, 206, 207, 222, 223 and 227 (Plates 5-9b). At the southern end of the site, the 1872 OS map depicts a north-west to south-east aligned field boundary of trees, with a return to the south-west (201). The 1938 OS map shows only the north-west to south-east alignment, suggesting the south-west return had been removed by this time. The north-west to south-east alignment of this field boundary is still present today as a mature tree line (Plate 5), although there was no evidence on the ground of the south-western return.

9.5.8 Feature 204 is shown on the 1872 OS map as a field boundary of trees, aligned north-east to south-west. This appears to have been removed by the 1938 OS map. There is little evidence of it in the ground, apart from an intermittent slight depression, no more than 0.15m in depth (Plate 6b). Feature 205 is located at the northern end of 204, and forms part of the same group of field boundaries. This is depicted on both the 1872 and 1938 OS maps and is clearly evident on lidar data. On the ground, the field boundary is still extant as a mature tree line (Plate 7).

9.5.9 Features 206 and 223 are on the same alignment of 205 and are both depicted on the 1872 and 1938 OS maps. Feature 206 was present on the ground as a very slight depression (Plate 8b), whilst Feature 223 was not identifiable on the ground. Field boundary 207 (Plate 9b), located at the western end of 206 on historic maps on a north-east to south-west alignment, was one of the clearest features in the survey. Visible as a depression measuring approximately 4m wide at the top and 0.6m deep, it was visible on the ground for its entire length as depicted in historic map and lidar data, approximately 120m. The majority of the depression was filled with trees and scrub vegetation.

9.5.10 On the same alignment as 207, field boundary 222 is clearly evident in lidar data, located in-between field boundaries 205 and 223, although it is not depicted on historic maps and was not visible on the ground. At the northern end of the site, Feature 227 is aligned north-west to south-east, on the same alignment as 205, 206 and 223. This is shown on the 1872 OS map but not on the 1938 edition, presumably having been removed by this time. There was no evidence of it on the ground.

9.5.11 Several linear depressions were identified on lidar data (202, 203, 208, 210, 212, 213, 216, 220, 221, 226). Features 220, 221 and 226 are all faintly visible on lidar data but are not depicted on historic maps, and were not identifiable on the ground. Feature 226, a straight north-east to south-west aligned feature on the lidar data proved to be a gravel footpath feature of the former golf course. Feature 202 (Plate 10b) was an ephemeral north-west to south-east aligned linear depression, visible on the ground for approximately 25m in length, although lidar data suggests that it ran for approximately 80m. The depression was very shallow, measuring 0.10-0.20m in depth. The vegetation beyond the northern extent of the visible feature was extremely dense, and it is possible that the feature continues on the ground beyond this point.

9.5.12 Feature 203 (Plate 11b) was a north-east to south-west aligned earthwork, measuring a maximum of 0.5m in height and visible for roughly 70m in length. This feature shows up very clearly on lidar data and it seems likely that this is related to the golf course, although it is difficult to determine from aerial photographs of the course. Feature 208 was a very slight depression, visible only for approximately 75m in length, aligned north-east to south-west. Aerial photograph data suggests this may represent a former trackway around the edge of the golf course. Features 210 and 213 (Plate 12b) appear to actually be the same feature, a slight depression aligned north-east to south-west, not depicted on the 1872 OS map but present on the 1938 edition, and also marked on modern OS maps as a drain. This feature was dry at the time of survey. The slight north-east to south-west aligned depression of 212 is likely to be a continuation of 208, the trace of a trackway around the former golf course.

9.5.13 Feature 209 (Plate 13b) was one of the clearest features on the ground in the whole survey, being the Scheduled Monument of Earthworks on Laleham Burway (NHLE 1005949). The enclosure on Laleham Burway has been identified as the possible site of a temporary Roman marching camp, which are generally rectangular or sub-rectangular enclosures. Roman marching camps tend to be bounded by a single earthen rampart and outer ditch and in plan are always straight-sided with rounded corners. This matches well with what is visible on the ground, with a single outer ditch and inner raised bank. However it is also suggested that this feature may be a post-Medieval stock enclosure. Several golfing features are present within and through the earthworks of the monument.

9.5.14 A pair of coronation benches set outside the club house bear the date 1902 (Feature 215, Plate 14b). These were made out of iron and are heavily corroded, with one also suffering further damage. Two distinct areas of ridge and furrow are identifiable from lidar data (224 and 225), although no evidence of this was identified on the ground.

Discussion

9.5.15 The earthworks in the survey area are largely very faint and ephemeral, with most being clearer on lidar than on the ground. Only where former field boundaries are marked by trees were they clear, otherwise being represented by very faint depressions in the ground. The majority of features appear to relate to either field drainage or possible water meadows and associated boundaries. Landscaping for the former golf course appears to have truncated many features, including the Scheduled Monument, although this does still remain visible. Areas of ridge and furrow, clear on liar data, are not visible on the ground, it is likely that former field boundaries and associated agricultural features have been removed by the golf course landscaping.

9.5.16 Several entries within the Surrey HER exist within the site boundary. A possible medieval stock enclosure is recorded at the southern end of the site (Asset 119 in the DBA), within an area of historic field boundaries, identified as Feature 201 during this survey. The HER record states that the enclosure was identified from aerial photographs, and it seems possible that it is field boundary 201 that has been wrongly identified. In the south-western corner of the site, close to Features 202 and 203, a possible Roman fort is recorded, which in 1858 was described as one of the three forts near Penton Hook, of a square form. The HER entry notes that it is probably not Roman as the area is low-lying and entirely unsuited. The HER also notes that there is nothing to be seen at the position cited in 1858, and indeed no earthworks were identified in this area during the survey. No further HER entries exist within the site itself, although several entries for findpots, representing Bronze Age to medieval activity, exist around the outside of the site boundary.

Areas 3 and 4 (Fields 33, 34 respectively)

9.5.17 Fields 33 and 34 are located at the northern side of the site, in an area recorded as a landfill site. Late 20th-century OS mapping shows gravel pits covering these areas. They are currently fairly level, largely with low grass coverage. No features of archaeological origin are visible in these areas.

Area 5 (Field 35)

9.5.18 Field 35 is located to the east of the Abbey River. It was not possible to access this area during the survey, as it appears to be only accessible from the Laleham Burway golf course. Lidar data shows a narrow drainage channel crossing the northern edge of the area (feature 119), but no other earthwork features likely to be of archaeological origin. The drainage channel feeds into the Abbey River, with a continuation to the west across part of Field 33, associated with a former gravel pit. Historic OS mapping suggests that Field 35 has not been disturbed by gravel quarrying. Though no earthwork features are visible, it is possible that buried archaeological remains could survive in this area.

9.5.19 Survey at Field 35 Laleham Golf course was not possible due to physical inaccessibility of the land.

9.6 Results: Geoarchaeological Survey *Tom Keyworth and Andy Howard*

Topographic and geological background

9.6.1 The site at Laleham Golf Course, referred to as Laleham from here on, is located on the outside bend of gentle meander of the River Thames in an area known as the Laleham Burway– technically an island – that lies between the River Thames to the east and the Abbey River to the west. The western boundary of the site is shared with an inactive stream, the Burway and there are restored gravel pit lakes to the west, south, and east. The Abbey River denotes the south-western extent of the field boundary. The area was landscaped as a golf course, though this closed in May 2017 and the site is currently unused (Figure 9.5).

9.6.2 The BGS mapping suggests the area is covered by a veneer of fine-grained alluvium although to the north, a gravel island of Shepperton Gravel is mapped and this deposit will extend beneath the study area.

Laleham: EM survey methodology

9.6.3 An EM survey was carried out in advance of the borehole survey at Laleham.

9.6.4 The results allow the site to be zoned into areas of high, moderate, and low conductivity. Areas of moderate-low and low conductivity were confined to the southwest of the site (LALWS02 and WS06) as well as to the northwest (LALWS12). Areas of high to moderate-high conductivity were located centrally and to the northeast/east of the site, with isolated areas to the northwest and south. Areas of moderate conductivity lay in between the areas of high and low conductivity – mainly on the outer extents of the site and to the south.

Laleham: window sample methodology

9.6.5 The site consisted of two fields: Field 35 and 36. Boreholes were only situated within Field 36 due to the inaccessibility of Field 35. In total, fifteen boreholes were drilled across the area. The boreholes were spaced 100-150m apart and every effort was made to provide an even coverage to aid deposit modelling. However, the presence of a Scheduled Ancient Monument in the northern part of the site restricted borehole interventions within this area.

9.6.6 Hence, the borehole survey was carried out across Field 36 which covers the entire extent of the former golf course.

Field 36

9.6.7 Field 36 was heavily landscaped and there were extensive rows of trees delineating fairways as well as artificial mounds, bunkers and small lakes. A total of 15 boreholes were drilled in the field (Table 9.1).

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
LALWS02	504220.894	168029.000	11.95	2.00	9.95
LALWS03	504355.196	167962.600	12.78	2.00	10.78
LALWS01	504354.813	167849.995	12.75	1.00	11.75
LALWS04	504443.865	167917.130	12.57	2.00	10.57
LALWS05	504581.965	167855.940	12.53	1.00	11.53
LALWS06	504377.063	168117.965	12.96	2.00	10.96
LALWS07	504467.051	168073.058	13.03	2.00	11.03
LALWS08	504554.292	168028.026	12.64	1.00	11.64
LALWS09	504646.082	167984.084	12.12	2.00	10.12
LALWS11	504713.008	168117.996	13.09	2.00	11.09
LALWS10	504534.039	168206.954	13.02	1.00	12.02
LALWS12	504468.045	168352.093	12.24	4.00	8.24
LALWS13	504556.027	168475.996	12.98	2.00	10.98
LALWS14	504754.261	168515.897	12.80	2.00	10.80
LALWS15	504807.171	168368.645	12.98	2.00	10.98

Table 9.1. Location and depth of window samples recorded at Field 36, Laleham

Results: EM survey

9.6.8 In contrast to the gradiometer survey which was hindered by the alluvial cover, the EM survey indicated that the majority of the site is likely to consist of terrace gravels with areas of floodplain interface surrounding these central cores. The alluvium and probable palaeochannels are located to the west and southwest of the site (Figure 9.6).

9.6.9 The zoned EM data was interpreted, on the basis of observed conductivity levels and field mapping (Figure 9.7). Areas of low conductivity, interpreted as shallow sands and gravels (gravel terraces / islands) with little fine-grained alluvial cover, were located centrally and to the east of the site. Areas of moderate conductivity, interpreted as the interface between gravel terraces and fine-grained sediments of the floodplain were located towards the outer extremities of the site (Figure 9.8). Areas of low conductivity, interpreted as much deeper fine-grained alluvial deposits or possible palaeochannels, were located to the south-west and the north of the site (Figures 9.9).

Results: deposits

9.6.10 The window sample survey identified a variety of units comprising Holocene alluvium overlying late Pleistocene sand and gravels. In the southwest (LALWS 01, 02, 03, and 06 Figure 9.10) and north (LALWS13, 14, and 15 Figure 9.11) of the site; the stratigraphy comprised: silt clay topsoil and subsoil, 0.20-0.35m in thickness, overlying thin, 0.40-1.30m, clay silt minerogenic alluvium, in turn, resting upon Shepperton Gravels at depths of 0.80-1.70m BGL (Figure 9.12).

9.6.11 In the central part of the site (LALWS, 04, 05, 07, 08, 09, 10, and 11) the stratigraphy comprised: silt clay topsoil and subsoil, 0.20-0.35m in thickness, overlying made ground, consisting of reworked sand and gravel, 0.45-1.20m in thickness, in turn resting upon Shepperton Gravels at depths of 0.45-1.60m BGL. This sequence related to the landscaping carried out for the golf course and is likely to have impacted upon the surface of the gravel terrace.

9.6.12 Only one borehole (LALWS12) located along the field boundary to the northwest edge of Field 36 contained organic deposits; the sequence comprised silt clay topsoil and subsoil overlying a clay silt minerogenic alluvium (0.80m in thickness) which became darker, organic silt (1.50m in thickness) with depth, and included woody remains. The entire sequence overlay Shepperton Gravels at a depth of 3.00m BGL, some 1.30m deeper than any other borehole drilled at this site. These deposits correspond to the course of a palaeochannel identified in the lidar data and mirrored by a depression in the basal gravels.

Results: samples

9.6.13 The absence of substantial alluvial deposits across Laleham meant that relatively few samples were recovered and those that were came from a single borehole (WS12).

Window Sample	Sample Depth (m BGL)	Sample ID	Field
LALWS12	1.40	158	36
LALWS12	1.50	159	36
LALWS12	1.60	160	36
LALWS12	1.65	161	36
LALWS12	1.85	162	36
LALWS12	2.20	163	36

Window Sample	Sample Depth (m BGL)	Sample ID	Field
LALWS12	2.35	164	36
LALWS12	2.55	165	36
LALWS12	2.80	166	36
LALWS12	2.85	167	36
LALWS12	3.00	168	36
LALWS12	2.70	169	36
LALWS12	2.85	170	36

Table 9.2 Samples taken for environmental assessment from Laleham

Results: macrofossil assessment

9.6.14 A single sample was processed for macrofossil assessment from WS12 2.80mbgl. The deposit demonstrated a high concentration of waterlogged plant and insect remains. Molluscs and ostracods were also well-preserved. A full report can be found in Appendix 3.

Results: radiocarbon dating

9.6.15 A total of two samples of organic alluvium were submitted for age determination from WS12. The samples were 15cm apart but have returned dates more than a thousand years apart. This may be due to the nature of the materials selected for dating, as the wood (SUERC-77404) could potentially have travelled some distance and be derived from reworked deposits. The age determination recovered from higher up the sequence (SUERC- 77403) may provide a more reliable date for the accumulation of the deposits.

9.6.16 This suggests that the channel was active in at least the Middle Bronze Age and perhaps into the later Neolithic. Further palaeoenvironmental analysis is required to determine the nature of the reworking and to select more suitable material for dating.

Window Sample	Sample Depth (m BGL)	Sample ID	Field	Lab code	Sample	Radiocarbon Age	Calibrated age 95% confidence
LALWS12	2.70	169	36	SUERC-77403	Organic Alluvial Silt Humic acid	3410 ± 23	1763 to 1638 cal BC
LALWS12	2.85	170	36	SUERC-77404	Wood	4643 ± 23	3513 to 3424 cal BC and 3384 to 3362 cal BC

Table 9.3 Radiocarbon results

Discussion: deposits

9.6.17 The borehole survey revealed a sequence of topsoil and subsoil overlying both minerogenic alluvium and/or made ground (the latter consisting of reworked alluvium and gravels). These deposits rested upon Shepperton Gravels at shallow depths, more so in the southern half of the site (Figure 9.13). Evidence of palaeochannels and deeper alluvial deposits are located to the west and southwest of the site.

9.6.18 The range-finder dating framework determined that the channel was infilling by at least the Middle Bronze Age if not earlier. It is likely that significant palaeoenvironmental remains are present within the sediment and the macrofossil assessment demonstrated good overall preservation of remains.

9.6.19 **Discussion: risk model**
Using the combination of borehole and geophysical information, a series of deposit models were constructed for key stratigraphic interfaces within the study area: the top of the Shepperton Gravel (i.e. Late Pleistocene palaeolandsurface); the top of the fine-grained alluvium and/or made ground, and; where available, the interface between minerogenic and organic alluvium (Figure 9.14).

9.6.20 The south-eastern corner had the shallowest depths at which the Shepperton Gravels were encountered. These depths increased moderately to the northwest and north of the site but the depths of to the top of gravel did not exceed 2.00m BGL. The exception to this was LALWS12 where gravels were encountered at 3.00m BGL. Palaeochannels identified from lidar imagery indicate that this borehole was likely sunk in the middle of a substantial topographic depression (channel feature), as evidenced by the borehole sequence (Figure 9.13).

9.6.21 Whilst there were some disparities between the anticipated geomorphology, as predicted by the EM survey, and the sequences observed during the borehole survey, the results were broadly complementary. No doubt features, such as bunkers, lakes, fairways, and other landscaping features associated with the construction of the golf course adversely skewed the interpretation (Figures 9.14 and 9.15).

9.6.22 The thickness of the fine-grained alluvial deposits encountered varied markedly across the site (Figure 9.16). In the centre and southeast of the site, no alluvium was recorded; instead these areas comprised made ground in the form of reworked sands and gravels. To the west and north minerogenic alluvium was encountered but these deposits were not substantial. The only significant minerogenic and organic alluvium was observed at LALWS12 and as previously noted, this is likely to be associated with a palaeochannel running broadly along the alignment of the Burway. The same lidar imagery suggests that LALWS02 and LALWS14 could have also encountered palaeochannel-like deposits, but none were recorded (Figure 9.16).

9.6.23 Significant landscaping of the site since 1904, associated with the construction of the golf course, has resulted in extensive disturbance of the underlying deposits. The central and eastern parts of the site consist of Shepperton Gravels, possibly forming a gravel island. The Burway is probably associated with a palaeochannel that now holds a reduced stream; though it was dry at the time of the borehole survey the sequence recorded by LALWS12 confirms the presence of organic deposits typical of those infilling a palaeochannel.

9.7 Summary and conclusions

9.7.1 The Stage 1 evaluations at Laleham have demonstrated the presence of earthwork features as detailed in the Scheduled Monument record. The geophysical survey was unable to provide further detail as to the likely function or age of this feature due to the level of disturbance caused by the golf course landscaping and the blanket of alluvial deposits present at the site.

9.7.2 Earthwork survey has identified various additional features across the site, the most significant probably being the extensive ridge and furrow. It was not possible to definitively identify the relationship between the ridge and the furrow and the Scheduled Monument.

9.7.3 Further investigation, in the form of targeted excavation, is necessary to characterise and date the Scheduled Monument, and to determine its relationship to other features.

9.7.4 The borehole survey was able to determine that channel deposits were present along the western edge of the site. This suggests the extant drain, which forms the western boundary of the golf course is a re-purposed palaeochannel. In addition to the channel deposits there are potentially overbank alluvial deposits surviving along the edge of this feature, which may preserve channel edge land-surfaces and associated archaeology.

9.7.5 The age determinations returned from the Laleham deposits suggest the channel was aggrading from at least the Middle Bronze Age if not earlier. The dating demonstrated possible reworking of the deposits due to the disparity between the two age determinations, i.e. showing a significant time span over a short sequence. The implications of the radiocarbon dates can only be fully understood with high resolution palaeoenvironmental assessment. The organic component of the deposits demonstrated excellent preservation of plant macrofossils and insect remains, and is likely to also preserve microfossil remains.

9.7.6 As Field 35 could not be accessed during this stage of the evaluations, geoarchaeological survey is recommended prior to trial trenching during Stage 2 survey.

9.7.7 A priority in this area is the investigation of the Scheduled Monument in order to determine the age and significance of the feature. In order to better understand the landscape context of any archaeological remains palaeoenvironmental assessment of the channel deposits is recommended.

10 Results: Shepperton

10.1 Introduction

10.1.1 The site was targeted for evaluation as initial desk-based surveys suggested that intact ground might survive around the lake margins in this area. In particular, the southern outlet falls within a Surrey Area of High Archaeological Potential, due to the presence of a late Roman/Saxon fish weir discovered during the gravel quarrying which lead to the creation of the current lake (Bird 1999).

10.1.2 This section comprises a brief introduction to the site, and describes the scope of Stage 1 evaluation. This is followed by: an archaeological and historical background (Section 10.2), research context (Section 10.3), and reports on the results of the various components of Stage 1 evaluation (Sections 10.4 to 10.6). A conclusion, with recommendations for further work, follows (Section 10.7).

Site location and scheme impact

10.1.3 The site was divided into two areas, Fields 29 and 30. These lay to the east and south of a former gravel pit, now a lake used for recreational purposes. The fields are currently used as an off-road running track and as access for fishing and swimming in the lake. The lake margins and the outer edges of the fields are wooded (Figure 10.1).

10.1.4 The underlying geology of the site as mapped by the BGS comprises Claygate Member, consisting of sand, silt, and clay overlain by superficial deposits of the Shepperton Gravel Member and Holocene alluvium.

10.1.5 The proposed channel will impact two areas at Shepperton; an inlet into the lake in the west, and an outlet into the River Thames to the south. The western inlet will have a maximum impact depth of 3.5 metres, and the southern outlet a maximum depth of 1.71 metres.

Fieldwork extent and constraints

10.1.6 Two forms of Stage 1 evaluation were carried out in this area: **geophysical survey** and **geoarchaeological survey** (window sample survey only; EM survey was not carried out due to the site's close proximity to water). Work was carried out as planned.

10.2 Historic and Archaeological Background

Mesolithic

10.2.1 Lithic findspots of this date are recorded at Walton.

Neolithic

10.2.2 Neolithic axes are recorded from Shepperton.

Bronze Age

10.2.3 An axe was recovered from the Thames at Shepperton, and a sword, a palstave, and a rapier from Desborough Cut.

Iron Age

10.2.4 A sword and a pot were discovered located south-west of Shepperton. An Early Iron Age roundhouse has been excavated north-west of Shepperton, with a contemporary burial recorded close by.

Roman

10.2.5 There is an apparent cluster of Roman material around Shepperton where a tessellated pavement was discovered, and other features and findspots of roof tile and pottery may indicate settlement of this period in the area. Roman roof tiles and pottery are recorded from an old gravel pit immediately south of Shepperton where posts of a fish weir of possible Roman or early medieval date are also known (see also section 10.2.8 below). Finds such as five 3^{rd}-4^{th} century pewter plates from near Shepperton also testify to activity in the vicinity in this period.

Early Medieval

10.2.6 A series of cremation and inhumation cemeteries are known from 18^{th} and 19^{th} century chance discoveries in and around Shepperton. Antiquarian records also note a Saxon barrow cemetery at Windmill Hill, Walton. A 6^{th}-7^{th} century pot discovered in 1927 at Anzac Mount, Walton-upon-Thames may be further evidence of this site. A 6^{th}-12^{th} century settlement with associated cemetery has also been excavated at Saxon Primary School, Shepperton. Shepperton itself was well established by the time of the Domesday survey of 1086 and is earlier mentioned in a charter of the 10^{th} century. Findspots identified for the Early Medieval period within this reach comprise a Saxon spearhead. A sword, scramasax and spur, possibly of the same period, are also known from the Thames at Coway Stakes.

Post-Medieval

10.2.7 Shepperton has a concentration of 17^{th} and 18^{th} century listed buildings within the historic core and conservation area**.** Map evidence shows surrounding area to have historically comprised enclosed fields. Additional areas of interest include a number of archaeological finds and features, including post-medieval brick-lined rubbish pits and wells excavated within the historic areas of Shepperton.

Previous Archaeological Work

10.2.8 Gravel extraction at the site took place in the early 1970s. Part of this work was monitored by archaeologists from the London Museum in 1972 and by the curator of Chertsey Museum later in the same year and in early 1973. The results of this are described below (Bird, 1999).

10.2.9 The remains of a substantial fish weir were encountered. This consisted of four rows of wooden stakes driven into the gravel with wattle infill. Salvage recording only could be carried out, complicated by the position of the base of the stakes below water level.

10.2.10 The stakes appear to have occurred in pairs. They were probably of oak, though no further analysis was carried out beyond initial observations. In general the stakes projected 1.65m above the water level. Many of the stakes appeared to be roughly octagonal in section.

10.2.11 It appears from a section drawing that substantial organic remains were encountered 2.5-3m below ground level (no absolute level is given, and this drawing does not include the upright stakes of the fish weir).

10.2.12 A radiocarbon date from a single sample taken from the base of the wattle suggested a late Roman or early medieval date, although with broad date range (AD250-690 at 95% confidence).

10.2.13 An initial attempt was made to follow the line of the stakes into the south bank of the then gravel pit (now the south bank of the lake). This was halted due to the need focus on those remains under immediate threat, but indicates likely further components of the weir in the area of proposed channel impact to the south.

10.2.14 Isolated finds of medieval and Roman date were discovered during gravel extractions. These are not securely located. A quantity of leather shoe soles was recovered from the eastern area (which remained marshy into the late nineteenth century).

10.2.15 The presence of a palaeochannel running north-west/south-east and containing human and animal bone was noted by Museum of London archaeologists (unpublished). A possible continuation of this palaeochannel was noted during recording of the fish weir.

10.3 Research Context

10.3.1 The relevant research framework for the evaluation work at this site is:

- Surrey Archaeological Research Framework (Bird 2006)

10.3.2 Research themes identified from the above framework are detailed below in chronological order.

10.3.3 **Early Medieval**

Settlement evidence
Key Issue: *where are the settlements related to the pagan cemeteries?*

Belief and burial
Key Issue: *the location, date and type of pagan cemeteries.*

10.3.4 There was initially considered to be a small possibility of addressing the issues of location of Saxon cemeteries and their related settlements at Shepperton. Stage 1 evaluation suggests this is unlikely, as the site appears to have been wet or marshy ground during the relevant period.

10.4 Results: Geophysical Survey

Introduction

10.4.1 Both Fields 29 and 30 were surveyed, using the methodology outlined in Section 2.4 above. A full report on the results of this survey was produced by SUMO Services (Gater, 2017d).

Results (Figure 10.2)

10.4.2 While no magnetic responses were recorded that could be interpreted as being of archaeological interest, there were several anomalies identified in both Fields 29 and 30 of uncertain origin.

10.4.3 A single linear trend in the data was noted in Field 29; this is interpreted as a land drain or former trench (Figure 10.3). In addition to this, several isolated anomalies were identified which were found difficult to interpret. They may be attributed to natural phenomena or connected with the former gravel workings.

10.4.4 Amorphous responses throughout both Fields 29 and 30 are directly related to differing periods of flooding and earlier water courses; they reflect natural magnetic variations in the soils. The bands of ferrous disturbance at the northern edges of

Fields 29 and 30 are almost certainly modern in origin and possibly associated with the gravel quarry pit.

10.4.5 Other ferrous responses close to boundaries are due to adjacent fences and gates. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data and their form is best illustrated in the XY trace plots. These responses are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil.

Conclusion

10.4.6 The survey did not identify any responses of archaeological interest. The results are dominated by natural alluvial responses and/or areas of magnetic disturbance associated with the gravel quarry. A linear trend is of uncertain origin but is likely to represent a modern land drain.

10.5 Results: Geoarchaeological Survey *Tom Keyworth and Andy Howard*

Topographic and geological background

10.5.1 The site at Shepperton was located on the inside bend of a large meander of the River Thames approximately 0.7km south southeast of Shepperton, Surrey. The site comprises two thin strips of grassland south and west of a restored gravel pit, now a lake. The western boundary was marked by trees; to the south the site was bounded by the River Thames. The land is currently used for recreational activities. The BGS mapping indicates that quarried mineral resources were associated with the Shepperton Gravel Member.

Shepperton: window sample methodology

10.5.2 In total, six boreholes were sunk across the site, which comprised two fields (Field 29, and 30). The boreholes were spaced 100m apart and every effort was made to provide an even coverage (Figure 10.4).

Field 29

10.5.3 Field 29 was gently undulating and located immediately west of the gravel pit lake. A total of three boreholes was drilled.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
SHEPWS01	507406.005	166337.835	10.044	5.00	5.04
SHEPWS02	507423.676	166240.190	10.201	6.00	4.20
SHEPWS03	507440.485	166148.696	10.232	5.00	5.23

Table 10.1 Location and depth of window samples recorded in Field 29, Shepperton

Field 30

10.5.4 Field 30 was located immediately to the south of the gravel pit lake. The ground surface was gently sloping from south to the north towards the lake edge. A total of three boreholes were drilled in this area.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
SHEPWS04	507536.156	166111.403	10.198	5.00	5.20
SHEPWS05	507642.403	166096.521	10.005	5.00	5.01
SHEPWS06	507742.528	166081.709	10.27	5.00	5.27

Table 10.2. Location and depth of window samples recorded at Field 30, Shepperton

Results: Deposits

10.5.5 The stratigraphy observed from the boreholes comprised the following broad sequence: silt clay topsoil and subsoil (combined thickness of 0.30-0.50m) overlying stiff minerogenic sand silt alluvium (0.60-2.00m in thickness). With depth, this became dark, organic alluvial sand silt (2.60-4.10m in thickness), which in turn overlay the Shepperton Gravels at depths of 4.50-5.85mbgl. The depth of Shepperton Gravel was reached in SHEP WS04 and 06 following the collapse of boreholes at 5.00mbgl (Figure 10.5).

Results: samples

10.5.6 In total, twenty-eight samples were recovered from three boreholes at Shepperton. A compete sequence at 0.20m intervals was taken from WS01.

Window Sample	Sample Depth (m BGL)	Sample ID	Field
SHEPWS01	4.95	102	29
SHEPWS01	3.7	103	29
SHEPWS01	3.2	104	29
SHEPWS01	1.5	105a	29
SHEPWS01	1.5	105b	29
SHEPWS01	4.7	106	29
SHEPWS01	3.5	107	29
SHEPWS01	1.7	108	29
SHEPWS01	3.1	109	29
SHEPWS01	3.3	110	29
SHEPWS01	4.3	111	29
SHEPWS01	4.9	112	29
SHEPWS01	3.9	113	29
SHEPWS01	2.7	114	29
SHEPWS01	2.5	115	29
SHEPWS01	2.1	116	29
SHEPWS01	2.3	117	29
SHEPWS01	4.5	118	29
SHEPWS01	2.9	119	29
SHEPWS02	2.3	120	29
SHEPWS02	3.8	121	29
SHEPWS02	5.9	157	29
SHEPWS03	1.7	122	29
SHEPWS03	3.6	123	29
SHEPWS03	2.9	124	29
SHEPWS06	2.75	125	30
SHEPWS06	1	126	30
SHEPWS06	4.9	127	30

Table 10.3: Samples for environmental assessment

Results: macrofossil assessment

10.5.7 A single sample was processed for plant macrofossil remains from SHEPWS01 3.20mbgl. This demonstrated a high concentration of weed seed taxa, which are suggested to represent modern contamination. This is unusual in such a deeply buried deposit and may suggest modern reworking of the deposits. There is also the potential for mixing of deposits by the sampling rig if material was pushed down into the lower deposits by re-cutting or hole collapse. A full report can be found in Appendix 3.

Results: Radiocarbon dating

10.5.8 A total of six samples were submitted for age determination. Only one of these subsamples yielded a reliable age estimate, attributable to the Medieval period; a second which yielded a modern date was deemed contaminated. All further samples failed due to insufficient carbon. A series of replacement samples have been submitted and the results are awaited.

Window Sample	Sample Depth (m BGL)	Sample ID	Field	Lab code	Sample	Calibrated Age 95% confidence	Radiocarbon Age
SHEPWS 01	1.50	15	29	SUERC -76756	Organic silt Humic acid	1696 to 1726 AD, 1813 to 1837 AD, 1844 to 1852 AD and 1876 to 1919 AD	9 BP ± 32
SHEPWS 01	4.90	16	29	SUERC -76757	Organic silt Humic acid	899 to 923 AD and 947 to 1031 AD	1044 BP ± 32
SHEPWS 06	2.75	178	30	SUERC 79215	Waterlogged wood *Corylus avellana sp.*	1676 to 1777 cal BC and 1799 to 1895 cal BC and 1903 to 1941 cal BC	126+/-30
SHEPWS 06	4.90	177	30	SUERC 79214	Waterlogged wood indet. rootwood	255 to 303 cal AD and 315 to 410 cal AD	1697+/-30
SHEPWS 02		175	29	GU4734 1	Organic silt humin		Failed due to insufficient carbon
SHEPWS 02		176	29	GU4734 2	Organic silt humin		Failed due to insufficient carbon
SHEPWS 03	1.70	17	29	GU4605 5			Failed due to insufficient carbon
SHEPWS 03	2.90	18	29	GU4605 6			Failed due to insufficient carbon
SHEPWS 06	1.00	19	30	GU4605 7			Failed due to insufficient carbon
SHEPWS 06	4.90	20	30	GU4605 8			Failed due to insufficient carbon

Table 10.4. Radiocarbon dating results

Discussion: deposits

10.5.9 The borehole survey revealed a substantial bipartite sequence of alluvial deposits comprising an upper minerogenic alluvium, overlying organic alluvium, in turn resting upon Shepperton Gravels. Little evidence of previous gravel extraction, in the form of made ground deposits, to the north and east was recorded, although this investigation lies outside of the immediate area where this would have taken place. Several samples were submitted for age determination but the majority failed due to insufficient carbon, despite two being from sediment units deemed peat-rich.

10.5.10 The age estimates from WS01 suggests an accumulation of peat during the Medieval period at close to 5m depth, the upper sample returned a modern date. The medieval date may also be erroneous; further palaeoenvironmental assessment and dating is required to confirm this. A second set of samples was submitted and only two dates were returned. These are inverted with a basal date of 255 to 410 cal AD and a date recovered from a shallower depth from the same core (WS06) returning a Bronze Age date,1676 to 1941 cal BC. These are radically different from the two age determinations recovered from WS01. The proximity of the two areas to the current course of the River may suggest complex reasons for these discrepancies. Again further work is required to establish the processes at work at this location and samples recovered from open sections may allow a better understanding of the nature of the depositional sequence.

Discussion: risk model

10.5.11 Using a combination of borehole and geophysical information, a series of deposit models were constructed for key stratigraphic interfaces within the study area: the top of Shepperton Gravel (i.e. Late Pleistocene palaeolandsurface); the top of the alluvial deposits encountered below the topsoils/ploughsoils, subsoils and/or made ground, and; where available, the interface between minerogenic alluvial deposits and organic alluvial deposits.

10.5.12 The data derived from the borehole survey were supplemented with data from the 2015 ground investigations. This provided additional information to fill in data-poor areas where borehole access was restricted. Due to the non-archaeological interpretations of the 2015 data the use of this information was limited to describing major stratigraphic interfaces such as the depth of Shepperton Gravel.

10.5.13 The depth at which Shepperton Gravel was encountered was variable, from as little as 1.20m to 5.85m BGL. The shallowest depths of gravel were observed to the northern end of Field 29 and the southeast of Field 30, marking the two farthest extremities of the site. Moderate depths of gravel were confined to the western side of Field 29 and the southern/north-eastern part of Field 30. The deeper depths were located closest to the lake edge: to the east in Field 29 and the north in Field 30. No palaeochannels were identified from lidar imagery within the study area (Figure 10.5).

10.5.14 There were substantial fine-grained (minerogenic Figure 10.8 and organic Figure 10.7) alluvial deposits observed at Shepperton, ranging from 4.00-5.55m in thickness. The thinnest deposits were observed to the north and south in Field 29 and at the eastern and southern boundaries of Field 30. Slightly deeper deposits were observed to the north and east in Field 30 but the most substantial accumulations appear to be in the centre of Field 29 (Figure 10.6).

10.5.15 The minerogenic alluvium, overlying the organic-rich deposits, ranged in thickness from 0.60-2.00m. The thickest deposits were located to the west of Field 30 and the south of Field 29 whilst shallower deposits were located to the north of Field 29 and the east of Field 30 (Figure 10.8).

10.5.16 The organic alluvium ranged from 2.60-4.10m in thickness. The less substantial deposits were observed to the west of Field 30 with thicker deposits being encountered in the centre of Field 29 and the western end of Field 30, in likely association with palaeochannel features (Figure 10.7).

10.5.17 The substantial thicknesses of the alluvial deposits, with organic alluvial material, are located within a part of the Thames valley that has substantial channel management features. The presence of a large aggregate extraction lake reduces the efficacy of the lidar data. The limited data available from the borehole survey also presents issues regarding reliably modelling the deposits.

10.6 Summary and Conclusions

10.6.1 The borehole survey at Shepperton demonstrates that substantial organic alluvial deposits are present at the site.

10.6.2 The range-finder dating had mixed success and only a single age determination has produced data that may have some value. This suggests accumulation at 5mbgl during the Medieval period, which either suggests rapid accumulation within a channel feature or that the dating is compromised. Further material has been submitted in order to establish a more secure chronology and to provide further confidence in the current single date.

10.6.3 The sample processed for macrofossil assessment demonstrated possible modern weed seeds at 3.20mbgl. This raises further questions regarding the security of the entire sequence of samples from this site and may suggest truncation from the aggregate extraction that is not immediately apparent in the lithology of the boreholes.

10.6.4 The presence of substantial alluvial accumulation may mask deeply buried wooden archaeological remains. This suggestion is corroborated by the discovery of rows of wooden stakes, interpreted as late Roman or early Saxon fish weirs, uncovered in 1972/3 during gravel extraction at the site (Bird, 1999). The exact location of this structure is unknown but it is thought to be approximately to the immediate north of WS06 at the edge of the lake. The limited work carried out on this structure during the 1970s salvage work makes this area extremely archaeologically and palaeoenvironmentally sensitive.

10.6.5 Stage 1 evaluations at Shepperton have raised questions regarding the nature and age of the deposits. Further radiocarbon dating may help to resolve some of these issues, alongside targeted palaeoenvironmental work to take place during Stage 2 evaluation.

11 Results: Desborough Island

11.1 Introduction

11.1.1 Desborough Island is an area of public land which has seen relatively little development during the modern period. In view of this, and in view of its immediate proximity to the area of High Archaeological Risk at Shepperton to the west, Stage 1 evaluation was carried out across the majority of the site.

11.1.2 This section comprises a brief introduction to the site, and describes the scope of the Stage 1 evaluation. This is followed by: an archaeological and historical background (Section 11.2), research context (Section 11.3), and reports on the results of the various facets of Stage 1 evaluation (Sections 11.4 and 11.5). A conclusion, with recommendations for further work, follows (Section 11.6).

Site location and scheme impact

11.1.3 The site comprises approximately 45 hectares of land, divided into two fields: 31 (Figure 11.1) and 32 (Figure 11.2).

11.1.4 Field 31 is an area of public open space, largely rough grassland with some areas laid down as football pitches. The central southern area is underlain by a substantial deposit of landfill. The central western area is overlain by a large deposit of made ground, probably derived from the excavation of the Desborough cut immediately to the south. Field 32 is rough grassland forming part of a waterworks and could not be accessed.

11.1.5 The underlying geology of the site comprises Claygate Member, consisting of sand, silt, and clay overlain by Shepperton Gravel and postglacial (Holocene) alluvium.

11.1.6 The habitat creation activities at Desborough Island will involve a ground reduction of 0.75m across the northern area of the site to create an area of flood-plain grazing marsh. To the south, impact will be restricted to topsoil stripping, and is not anticipated to involve ground reduction greater than 0.2m.

11.1.7 The football pitches and the area of made ground are not included in the habitat creation area and will not be included in Stage 2 survey. Field 32 is not included in the habitat creation area, and will not be included in Stage 2 survey.

Fieldwork extent and constraints

11.1.8 Two forms of Stage 1 evaluation were carried out in this area: **geophysical survey** and **geoarchaeological survey** (both EM survey and borehole survey).

11.1.9 Both forms of survey were carried out largely as planned, although geophysical survey was slightly restricted by the presence of vegetation across parts of the site, and permission was not given for window sample survey across the area of the football pitches.

11.2 Historic and Archaeological Background

Mesolithic

11.2.1 Lithic findspots of this date are recorded at Walton.

Bronze Age

11.2.2 A sword, a palstave, and a rapier were recovered from Desborough Cut.

Roman

11.2.3 Desborough Island lies just to the east of the gravel quarry at Shepperton in which a substantial Roman or early medieval fish weir was discovered (see Section 10 above).

Early Medieval

11.2.4 A series of cremation and inhumation cemeteries are known from 18th and 19th century chance discoveries in and around Shepperton. Antiquarian records also note a Saxon barrow cemetery at Windmill Hill, Walton. A 6th-7th century pot discovered in 1927 at Anzac Mount, Walton-upon-Thames may be further evidence of this site. A sword, scramasax, and spur are also known from the Thames at Coway Stakes.

Post-medieval

11.2.5 Cropmarks have been noted in the western half of Desborough Island, possibly related to Oatlands Park. A series of Corporation of London Tax Posts of the 1860s is recorded along this reach of the river. A Royal Observer Corps monitoring post was present on Desborough Island.

11.3 Research Context

11.3.1 The relevant research framework for the evaluation work at this site is:

- Surrey Archaeological Research Framework (Bird 2006)

11.3.2 Research themes identified from the above framework are detailed below in chronological order.

11.3.3 **Early Medieval**

Settlement evidence
Key Issue: *where are the settlements related to the pagan cemeteries?*

Belief and burial
Key Issue: *the location, date and type of pagan cemeteries.*

11.3.4 There was considered to be the possibility of addressing the issues of location of Saxon cemeteries and their related settlements at Desborough Island. Stage 1 evaluation did not provide direct evidence, but did suggest that suitable areas for settlement or burial survive in an undisturbed form in parts of the site.

11.4 Results: Geophysical Survey (Figure 11.1)

11.4.1 **Introduction**

Field 31 was surveyed, using the methodology outlined in Section 2.4 above. A full report on the results of this survey was produced by SUMO Services (Gater, 2017b).

Results

11.4.2 No magnetic responses were recorded that could be interpreted as being of archaeological interest.

11.4.3 In the south-eastern survey block there is a clear divide between the data in the north and that in the south. The division coincides with a recent former field boundary. Parallel trends in the data are indicative of recent ploughing. There is a clear curving band in the data in the south-western block. This marks a former course of the River Thames.

11.4.4 A small pipe runs through the centre of the south-eastern block and then turns east and follows the line of the former boundary. The northern half of the south-eastern block is magnetically disturbed; although the origin is unknown this is considered to almost certainly be a recent occurrence, possibly associated with levelling of the land for the current football pitches.

11.4.5 Ferrous responses close to boundaries are due to adjacent fences and gates. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data and their form is best illustrated in the XY trace plots. These responses are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil.

Conclusions

11.4.6 Apart from mapping a former channel of the River Thames, the survey did not identified any responses of archaeological interest.

11.5 Results: Geoarchaeological Survey *Tom Keyworth and Andy Howard*

Topographic and geological background

11.5.1 Desborough is located immediately to the east of the site at Shepperton on the opposite bank of the Thames on the western side of Desborough Island (Figure 11.2). The western and northern boundaries of the site were defined by the River Thames. To the east are recreational facilities and a water treatment works, and to the south lies a road immediately north of the artificial channel, the Desborough Cut. Current land-use is for recreational activities. The surrounding lakes are restored gravel pits currently utilised for watersports. The BGS mapping indicates that area is covered by a veneer of fine-grained alluvium overlying Shepperton Gravels.

Methodology: EM survey

11.5.2 An EM survey was carried out in advance of the borehole survey across Field 31, with the exception of its southern extent due to dense vegetation cover.

Methodology: Borehole survey

11.5.3 In total, nine boreholes were sunk across the site (Field 31). The boreholes were spaced 100m apart and every effort was made to provide an even coverage.

11.5.4 Field 31 consisted of two separate topographic areas: the southern half was elevated, sloping sharply downwards to the north onto the main portion of the field. This main section of the site was flat and grassy.

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
WS01	507907.152	166471.655	9.891	2.00	7.89
WS04	508007.971	166369.561	9.934	3.00	6.93
WS05	508008.614	166256.309	10.185	2.00	8.19
WS06	508011.210	166155.773	10.391	2.00	8.39
WS07	508009.448	166056.362	11.792	3.00	8.79
WS08	508111.206	166369.386	9.923	2.00	7.92
WS09	508108.782	166257.157	10.287	1.00	9.29
WS10	508111.409	166156.465	10.378	2.00	8.38
WS11	508210.611	166370.238	10.058	1.00	9.06
WS12	508210.031	166258.596	10.045	2.00	8.05

Window Sample	Easting	Northing	Height (m AOD)	Total Depth (m BGL)	Depth Attained (m AOD)
WS13	508309.860	166369.815	9.927	2.00	7.93

Table 11.1 location and depth of window samples Field 31, Desborough

Results: EM survey

11.5.5 Areas of low conductivity made up the north-western and eastern half of the field with the exception of the north-eastern corner. Areas of moderate conductivity were located to the northwest and northeast of the site, dividing the areas of low conductivity and high conductivity. Areas of high conductivity occurred in isolated pockets to the northwest and northeast, but the main concentrations are related to two distinct channel-like features to the west of the site (Figures 11.3 and 11.4).

11.5.6 The conductivity data has been used to reconstruct subsurface geomorphology based on the level of conductivity e.g. low conductivity indicating terrace gravel islands, and the potential for sub-surface archaeological remains (Figures 11.5 and 11.6).

Results: deposits

11.5.7 The stratigraphy observed in the boreholes at Desborough comprised the following sequence: silty clay topsoil and subsoil (combined thickness of 0.30-0.54m) overlying silty clay minerogenic alluvium (0.10-1.50m in thickness), which became increasingly silty with depth. This fine-grained alluvium directly overlay Shepperton Gravel at relatively shallow depths of 0.52-1.90m BGL (Figure 11.7).

11.5.8 The exceptions to this general sequence were observed in DESWS07, the southernmost borehole, where there was considerable made ground (1.45m in thickness) overlying minerogenic alluvium (1.55m in thickness). The depth at which Shepperton Gravels were encountered was not recorded due to the collapse of the borehole walls at 3.00m BGL (Figures 11.8 and 11.9).

11.5.9 Boreholes DES WS01 and WS04 in the northwestern area of the site encountered organic-rich sandy silt alluvium (0.55m and 1.22m in thickness respectively) below the inorganic alluvium (0.95m and 1.48m in thickness respectively). The Shepperton Gravel was encountered in WS01 at 1.90m BGL but not in WS04 following the borehole collapse at 3.00m BGL. With depth, organic-rich sandy silt alluvium (thicknesses of 0.55m in WS01 and 1.22m in WS04) was also observed below the minerogenic alluvium in DESWS01, and in WS04; in the latter the sediments were marginally peaty.

Results: samples

11.5.10 Only three samples suitable for environmental analysis were taken from Desborough, all from borehole DESWS04.

Window Sample	Sample Depth (m BGL)	Sample ID	Field
DESWS04	1.78	93	31
DESWS04	1.50	94	31
DESWS04	2.15	95	31

Table 11.2: Samples for environmental assessment

Results: macrofossil assessment

11.5.11 A single sample was processed from DESWS04 1.50mbgl. This demonstrated good preservation and high concentrations of plant macrofossil and insect remains. A full report can be found in Appendix 3.

Results: radiocarbon dating

11.5.12 A total of two samples were submitted for age determination which suggested that sediments were accumulating between the Bronze Age and Roman period. These dates are tentatively accepted as reliable, although they suggest either extremely slow accumulation at the site or possible reworking.

Window Sample	Sample Depth (m BGL)	Sample ID	Field	Lab code	Sample	Calibrated age 95% confidence	Radiocarbon Age
DESWS04	1.50	13	31	SUERC-76755	Peat humic acid	82 to 237 AD	1852 BP ± 32
DESWS04	1.78	180	31	SUERC-79217	Waterlogged wood indet root wood	2290 to 2130 cal BC and 2086 to 2051 cal BC	3769+/-30

Table 11.3: Radiocarbon dating

Discussion: deposits

11.5.13 The borehole survey recorded a stratigraphic sequence consisting of mainly inorganic, minerogenic alluvium overlying shallow sands and gravels. The exception to this was the northwest of the site (WS01 and WS04) where organic-rich alluvium was present below the minerogenic alluvium. This organic deposit yielded two age esti0mates of 3769+/-30BP (SUERC-792172290 to 2130 cal BC and 2086 to 2051 cal BC) and 1852 BP ± 32BP (SUERC-76755, 82-237 cal AD), suggesting organic accumulation since at least the Bronze Age and into the Roman period. The organic accumulation was in close proximity to possible palaeochannels identified within the site and it is likely that these deposits were encountered in WS04 and WS05.

11.5.14 **Discussion: EM survey**

The EM survey also identified the palaeochannel and areas of high conductivity to the north, north-west, and west of the site likely representing areas of alluvial overbank deposition (Figure 11.9). The remainder of the site, to the south and east had low conductivity readings indicative of shallow sand and gravels, probably representing buried gravel terrace or an island beneath a fine veneer of alluvium.

11.5.15 **Discussion: risk model**

Using a combination of borehole and geophysical information, a series of deposit models were constructed for key stratigraphic interfaces within the study area: the top of Shepperton Gravel (i.e. Late Pleistocene palaeolandsurface); the top of the alluvial deposits encountered below the topsoils/ploughsoils, subsoils and/or made ground, and; where available, the interface between minerogenic and organic alluvial deposits.

11.5.16 The depth at which the Shepperton Gravel was observed ranged from 0.52m to 4.10m BGL. In order to increase the accuracy of the model constructed with 2017 data, results of the current borehole survey were supplemented with data from the 2015 ground investigations. The shallowest depths were concentrated off-centre to the northeast of the site. Deeper depths were observed to the south of the site, with the depth of gravel increasing with proximity to the Desborough Cut. Deeper gravels were also encountered to the northwest and west of the site, correlating broadly with palaeochannels identified from LiDAR imagery, as well as in isolated areas to the north (C3CPT48) (Figures 11.10 and 11.11).

11.5.17 Fine-grained alluvial deposits ranged from 0.10m to 1.55m in thickness. The thinnest deposits were observed off-centre to the north-east, correlating positively with the shallowest depths at which gravel was encountered. The more substantial deposits of alluvium were observed to the south of the site and correlated positively with the deeper depths of gravel. To the north and west of the site there were further substantial alluvial deposits correlating with palaeochannels identified from LiDAR imagery (Figure 11.12).

11.5.18 The zonation of landforms on the valley floor interpreted from the conductivity data provides an indication of the subsurface geomorphology (Figure 11.13). Areas of low conductivity, indicative of gravel, correlated with areas of thin alluvium, with the exception of the southern extent which was not surveyed as part of the EM data collection. Areas of moderate conductivity, indicative of water retaining sediments, correlated with areas of more substantial alluvium with the exception of the southern extent of the site where EM survey was not conducted and there were substantial areas of made ground.

11.5.19 The areas of high conductivity, indicative of palaeochannels, have a slight correlation with areas of deeper alluvium identified in the borehole survey, but are strongly correlated with palaeochannels identified in the LiDAR imagery.

11.5.20 There were higher levels of disturbance to the south, especially in the topographically higher areas (north of the Desborough cut). This suggests there is likely to be less potential due to the levels of made ground recorded. The palaeochannels located to the west and north of the site may preserve structural, wooden archaeological remains in addition to well preserved palaeoenvironmental deposits dating to at least the Roman period. The depth of the identified channel is at 3.00m bgl and issues with the recovery of the lower part of the sequence may indicate that pre-Roman deposits may be present at the site.

11.5.21 The gravel island is likely to have the potential to preserve traditional dryland archaeological remains; the lack of features identified during geophysical survey reflects the thickness of the alluvium across the area.

11.6 Summary and conclusions

11.6.1 Stage 1 evaluation has demonstrated that both wider floodplain and in-channel deposits are present at the site. The former has made prospection for dryland archaeological remains using geophysical techniques problematic, being deep enough to mask any surviving features from detection. The potential for dryland archaeological remains to be preserved below alluvial deposits remains high..

11.6.2 Palaeochannel deposits have been demonstrated to be accumulating from at least the Roman period, if not earlier. The macrofossil assemblage demonstrated good preservation of palaeoenvironmental proxies and the deposits have the potential to preserve wooden archaeological remains. These deposits are unlikely to be affected by the area of habitat creation; however, should archaeological remains be encountered in the trial trenching phase, they should be targeted for targeted sample recovery to enable high resolution palaeoenvironmental assessment.

12 Conclusions

12.1 Summary of results Stage 1

12.1.1 The stage 1 investigations have provided baseline data to inform further investigation along the route of the new Thames channel. The range-finder radiocarbon dating has also provided a chronological framework to better target the recovery of samples and to understand the complexities of the depositional sequences along the route. The geoarchaeological geophysics and borehole surveys have allowed landforms to be mapped so that future trenching can be targeted over those areas most likely to preserve archaeological remains. The boreholes have also demonstrated that deep sequences of deposits with high palaeoenvironmental potential exist across the scheme, with most dating to the Mesolithic period.

12.1.2 The fieldwalking at Datchet confirmed the presence of a site that likely has its origins in the prehistoric period and may have been occupied up until the medieval period. In addition the age determinations recovered from the palaeochannel to the west of the site demonstrate significant deposits accumulating during the Mesolithic and into the Neolithic period.

12.1.3 In other areas, such as Horton and Datchet Lakes, intact deposits and surfaces have been encountered despite extensive truncation by aggregate extraction and landscaping. These have the potential to preserve buried land surfaces dating to the earliest prehistoric as well as palaeoenvironmental sequences.

12.1.4 In addition to the potential for traditional dryland archaeological remains the thick deposits of organic and minerogenic alluvium have the potential to preserve organic artefacts and structures. One such structure is likely to be encountered at Shepperton in the form of a possible fish weir. Other features that have been preserved within palaoechannel and floodplain deposits include loagboats, platforms and votive offerings.

12.1.5 The table (12.1) below presents the key findings and archaeological potential of each site as determined by the Stage 1 survey. The key issues relate to areas where archaeological remains are likely to be present, i.e. gravel terraces/islands and the complex and deeply buried palaeoenvironmental sequences.

Site	Dating	Features	Archaeology
Datchet: Southlea farm	Mesolihtic-Neolithic	Palaeochannel as well as alluvium to the south of the fieldwalked area, wood in the cores	Fieldwalking Bronze Age and Roman finds, flint also suggests Neo-BA activity
Datchet: Lakes	3 failed dates Two dates demonstrated Mesolithic accumulation c.5988-4696 BC	Palaeochannel re-purposed as a field drain, complex strat changes	Minimal potential, very deeply buried if any
Horton: Station Road Wraysbury	Mesolithic	Organic alluvium sealing gravel surface	Possible that archaeological features survive below the alluvium depending on its age, not all the area is affected by the quarry in Field 16
Thorpe Hay Meadow	Early Mesolithic and early Post Glacial	Palaeochannel in Field 18, Field 20 and floodplain alluvial deposition over an island in Field 19	Wood in the cores potential for wooden structures, possible early Mesolithic buried land surfaces
Chertsey: Abbey Meads	Both Early Mesolithic and Middle Bronze but these dates inverted	Dendritic channel pattern, MBA channel and Mesolithic floodplain deposits, date inversion on the channel, Burway drain is a channel repurposed	Alluvial blanket may mask archaeological deposits, potential for gravel islands within the channel system
Laleham	Late Neolithic and MBA but cautious	Palaeochannel and some alluvial cover, fluvial reworking	Undated earthworks SAM, ridge and furrow and possible alluvial blanketing
Shepperton	Resubmitted dates inverted Bronze Age and Roman WS1 9th-11th century and poss post medieval accumulation	Palaeochannel, possibly a managed channel	Close proximity to Shepperton Quarry fish weir may extend into this area
Desborough	Roman 1st-3rd century	Palaeochannel but mainly inorganic alluvial deposition	Alluvial blanket may mask archaeological features

Table 12.1 Summary of results

12.2 Stage 2 Strategy

12.2.1 The Stage 1 results have been used to inform a proposed strategy for further investigation. In addition to traditional trial trenching methods other techniques will be employed to understand the complex range of deposits. The potential for archaeological remains in areas sealed by thick sequence of alluvium is high in addition to the potential for archaeological remains within the palaeochannels themselves. These can include fixed fishing structures and watercraft as well as votive offerings. The challenges in prospecting for such sites are well known and a combination of techniques are usually required. The proposed investigative strategy for Stage 2 is summarised below (Table 12.2). This included both standard and deep trenching in order to characterise the deposits and potential archaeological features. Wherever possible sample for palaeoenvironmental assessment should be recovered from open sections, where this is not possible then a hand auger with a Russian head attachment can be used.

Site	Field	Stage 1	Stage 2	Detail
Datchet: southlea Farm	6	Geophysics EM survey Boreholes	Trenches and one deep trench	Trenching over known archaeological site, deep trench to evaluate the palaeochannel depostis
Datchet: southlea Farm	8	Geophysics EM survey Boreholes	Standard trenching	Trenching over known archaeological site,
Datchet: southlea Farm	9	Geophysics Field survey EM survey Boreholes	Standard trenching	Trenching over known archaeological site
Datchet: southlea Farm	10	Geophysics Field survey EM survey Boreholes	Standard trenching	Trenching over known archaeological site
Datchet: southlea Farm	11	Geophysics Field survey EM survey Boreholes	Standard trenching	Trenching over known archaeological site
Datchet Lakes	13	Geophysics Boreholes	Single trench	Lack of intact ground means only room for one trench
Datchet Lakes	15	Geophysics Boreholes	Targeted palaeoenvironmental sampling	Deposits in this field to be sampled either during trenching using hand auger or when the channel cut is made
Horton Wraysbury	16	Boreholes	Two trenches	No palaeochannels in this area, standard approach
Thorpe Hay meadow	18	Geophysics EM survey Boreholes	three deep trenches two standard trenches	Potential for wooden archaeological remains and deep palaeoenvironmental sequences as well as possible buried land surfaces
Thorpe Hay meadow	20	Geophysics EM survey Boreholes	four deep trenches	Potential for wooden archaeological remains and deep palaeoenvironmental sequences as well as possible buried land surfaces
Chertsey Abbey Meads	23	Geophysics Field survey EM survey Boreholes	Standard trenching	Impact depths are such that channels wont be encountered may be possible to recover samples with Russian auger
Chertsey Abbey Meads	25	Geophysics Field survey EM survey Boreholes	Standard trenching	Impact depths are such that channels wont be encountered may be possible to recover samples with Russian auger
Chertsey Abbey Meads	26	Geophysics Field survey EM survey	Standard trenching	Impact depths are such that channels wont be encountered may be

Site	Field	Stage 1	Stage 2	Detail
		Boreholes		possible to recover samples with Russian auger
Chertsey Abbey Meads	27	Geophysics Field survey EM survey Boreholes	Standard trenching	Impact depths are such that channels wont be encountered may be possible to recover samples with Russian auger
Laleham	35		Hand auger	Possible recovery of samples with Russian auger
Laleham	36	Geophysics Field survey EM survey Boreholes	Standard trenching	Possible earthwork that requires dating, trenches to avoid substantial vegetation, samples to be recovered for palaeo in open sections or with Russian auger
Shepperton	29	Geophysics Boreholes	Single deep trench	Possible wooden structure, sampling from open sections where possible but Russian auger otherwise
Shepperton	30	Geophysics Boreholes	Three deep trenches	Possible wooden structure, sampling from open sections where possible but Russian auger otherwise
Desborough	31		Minimal to none	Depending on impact depths which may include just the topsoil no or very little trenching may be carried out
Desborough	32	EM survey Boreholes	Possibly none	Depending on impact depths which may include just the topsoil no or very little trenching may be carried out

Table 12.2 Stage 2 evaluation strategy

12.2.2 It is hoped that this approach will allow a better understanding of the nature age and character or the archaeological remains along the route of the scheme. In addition the palaeoenvironmental data gathered will be invaluable in understanding the nature of the landscape surrounding those sites.

13 Figures and Plates

13.1 Plates: Chertsey, Abbey Meads Earthworks Survey (Plates 1a to 6a)

Plate 1a: general view across central part of Area 1, facing west

Plate 2a: embanked trackway 114, viewed facing east

Plate 3a: stream 101, viewed facing west

Plate 4a: slight ridge feature, part of 109, viewed facing southwest

Plate 5a: scarp 108 at the edge of area 109, viewed facing south

Plate 6a: Area 3, viewed facing south

13.2 Plates: Laleham Golf Course Earthworks Survey (Plates 1b to 6a)

Plate 1b: Feature 214, drainage ditch. Looking north, scale 1m.

Plate 2b: View looking towards Feature 219. This feature could not be observed due to the heavy vegetation obscuring access to it.

Plate 3b: Feature (217). Lookgin west, scale 1m.

Plate 4b: Feature (218). Looking north, scale 1m.

Plate 5b: Feature 201, a historic field boundary of mature trees. Looking north-west

Plate 6b: Feature 204. Looking south-west

Plate 7b: Feature 205, looking south-east

Plate 8b: Feature 206, looking south-east

Plate 9b: Feature 207, facing south-west

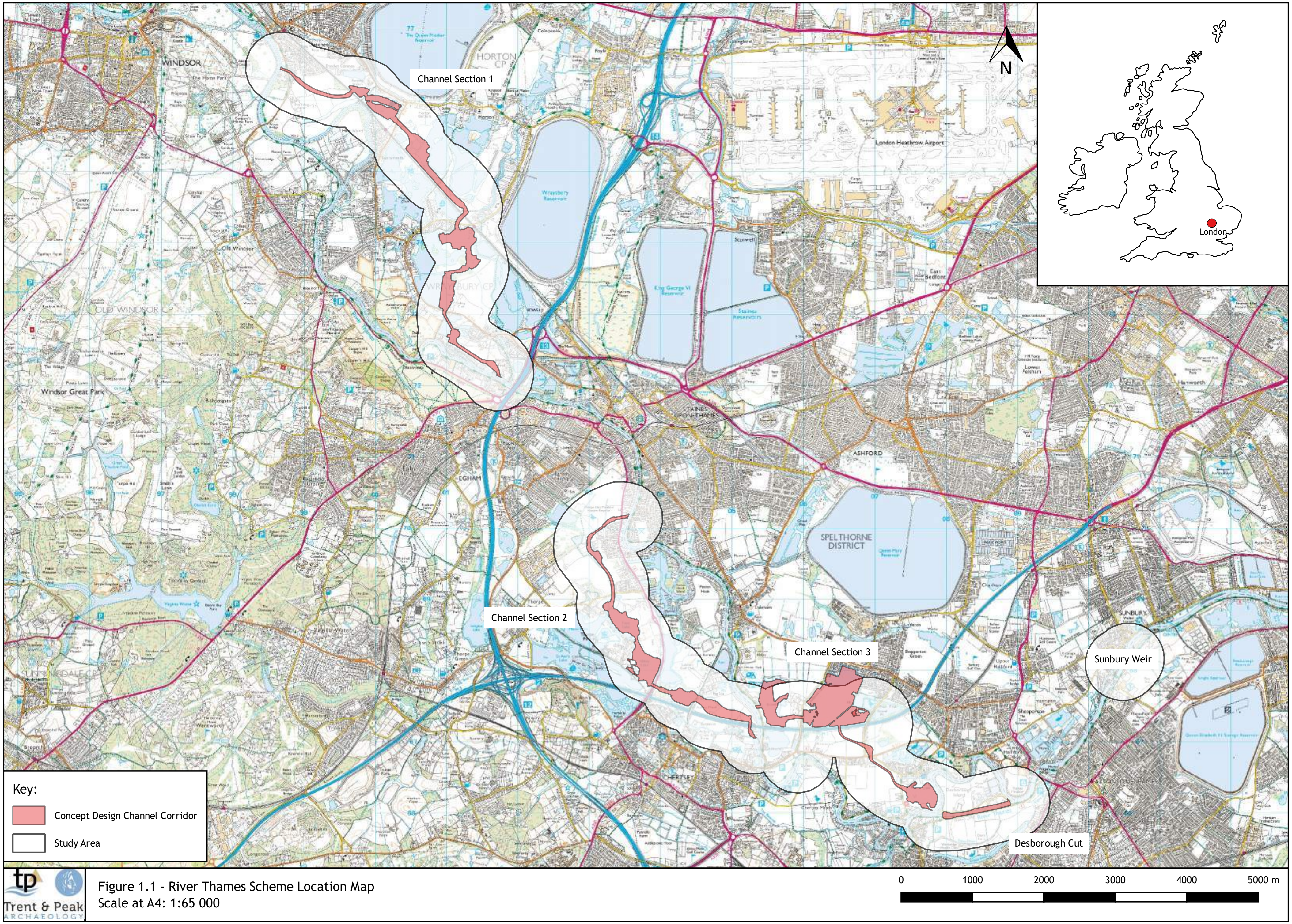
Plate 10b: Feature 202. Looking north-west.

Plate 11b: Feature 203. Looking north-east

Plate 12b: Linear feature/ditch 210 and 213. Facing south-west, scale 1m.

Plate 13b: Scheduled Monument (Feature 209), with outer ditch (left) and raised bank. Looking north.

Plate 14b: Coronation bench (Feature 215). Looking west, scale 1m



Trent & Peak ARCHAEOLOGY

Figure 1.1 - River Thames Scheme Location Map
Scale at A4: 1:65 000

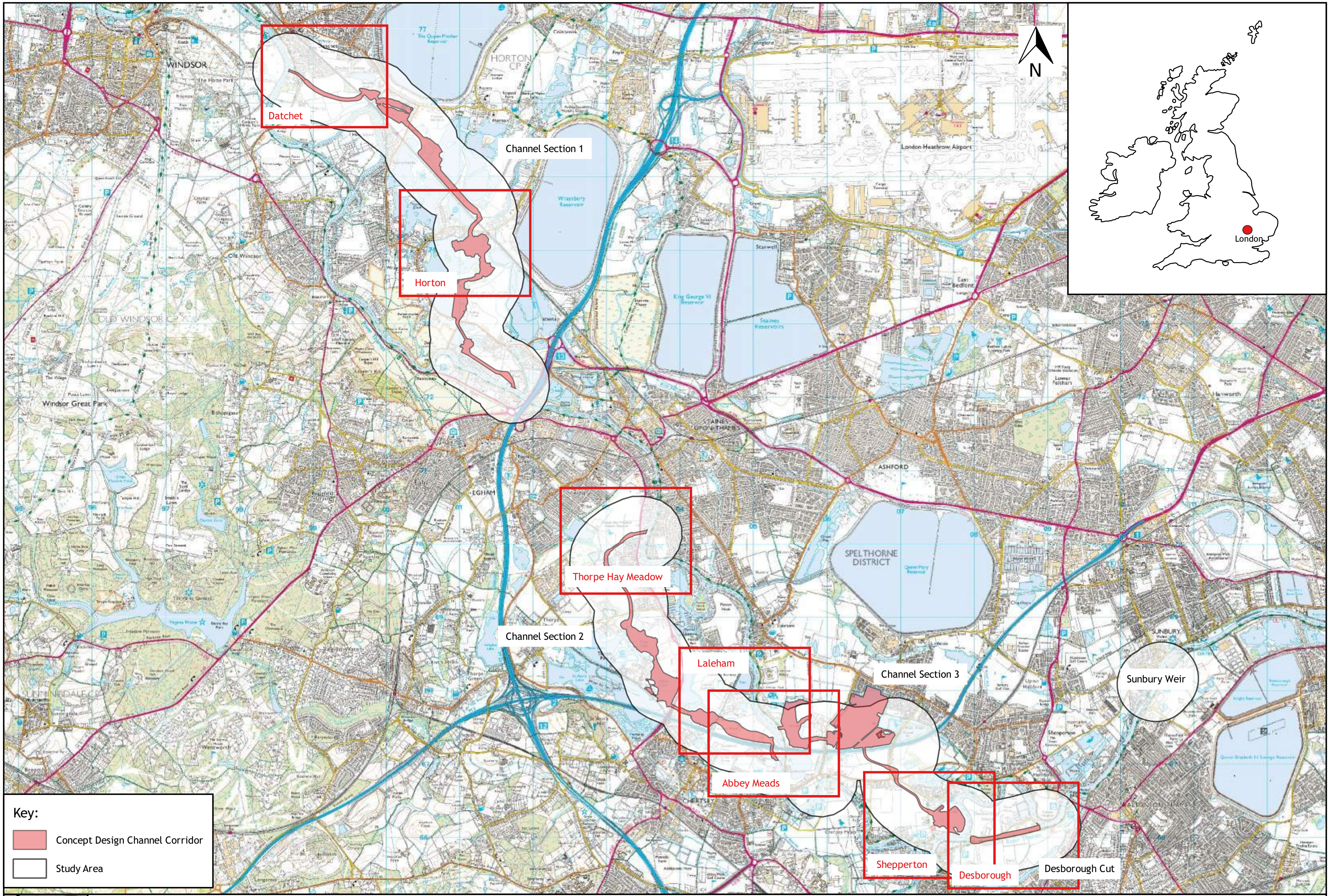
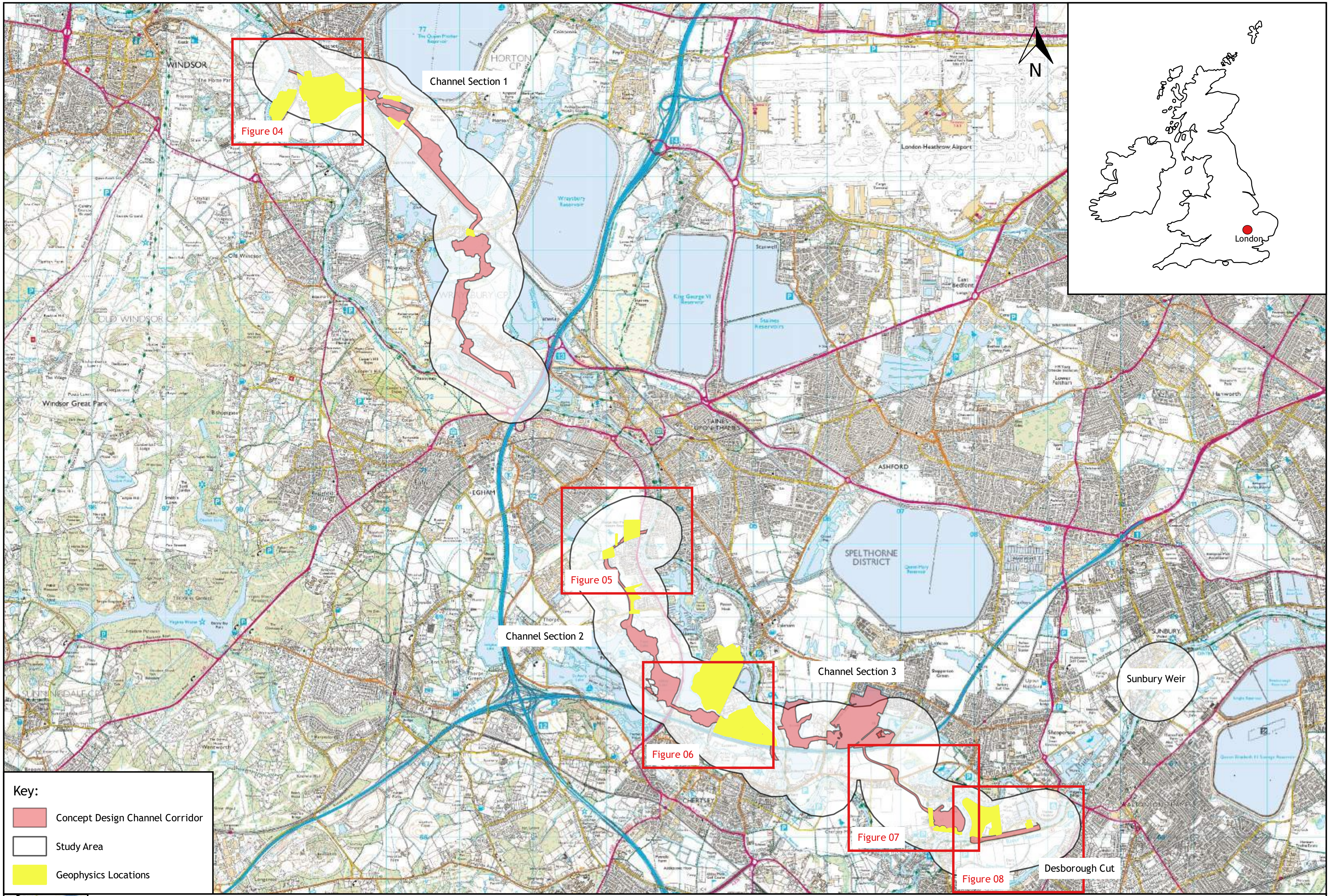


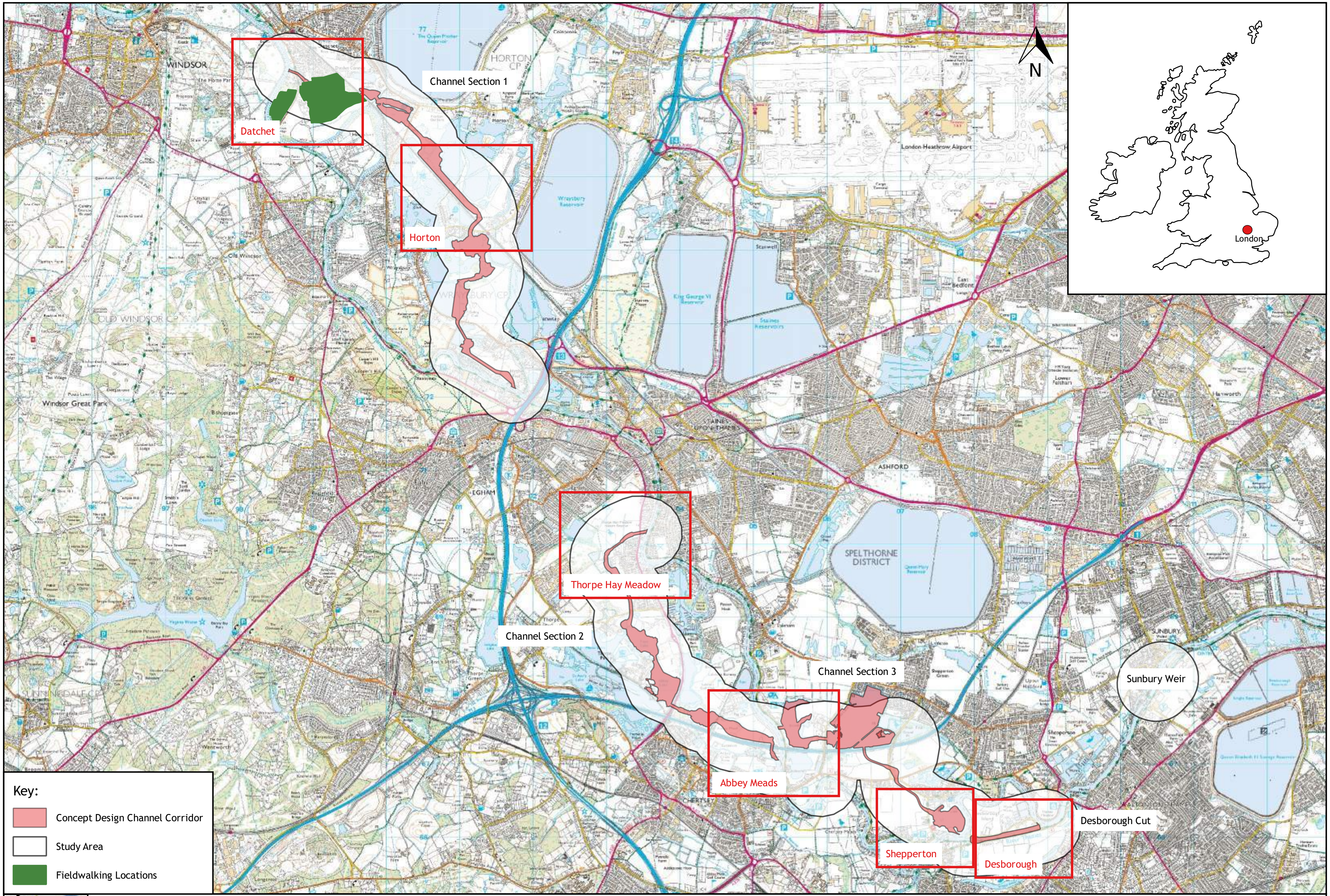
Figure 1.2 - Site Location Map
Scale at A4: 1:65 000

0 1000 2000 3000 4000 5000 m



Trent & Peak ARCHAEOLOGY

Figure 2.1 - Location of Geophysical Investigations
Scale at A4: 1:65 000



Trent & Peak ARCHAEOLOGY

Figure 2.2 - Locations of Fieldwalking Surveys
Scale at A4: 1:65 000

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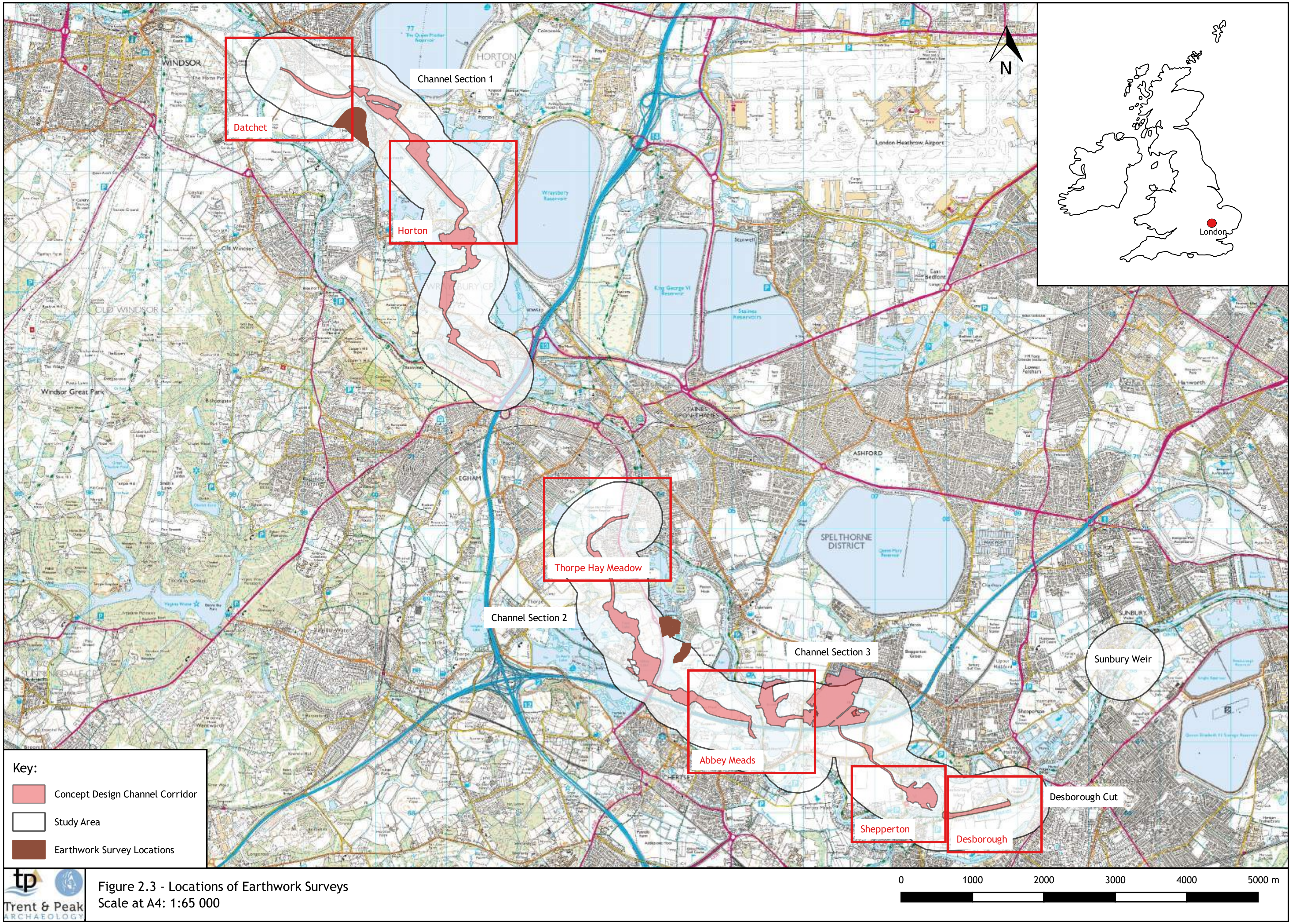

Figure 2.3 - Locations of Earthwork Surveys
Scale at A4: 1:65 000

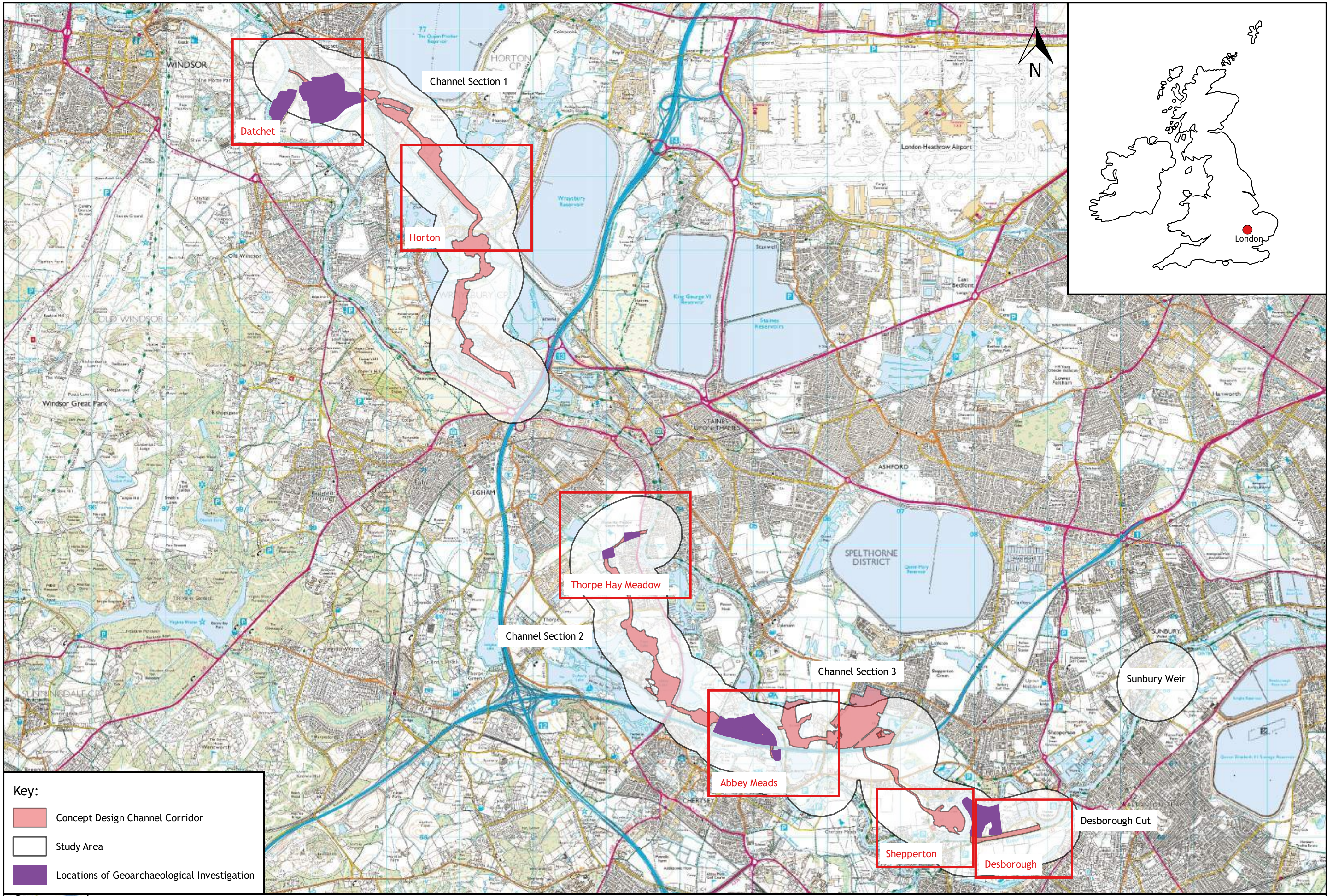

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Figure 2.4 - Locations of Geoarchaeological Investigation
Scale at A4: 1:65 000

Figure 4.1 - Geophysical survey Results at Datchet Southlea Farm (Channel Section 1)

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Figure 4.2 Geophysical Survey Results at Datchet Southlea Farm Field 11 (Channel Section 1)
Scale at A4: 1:3000

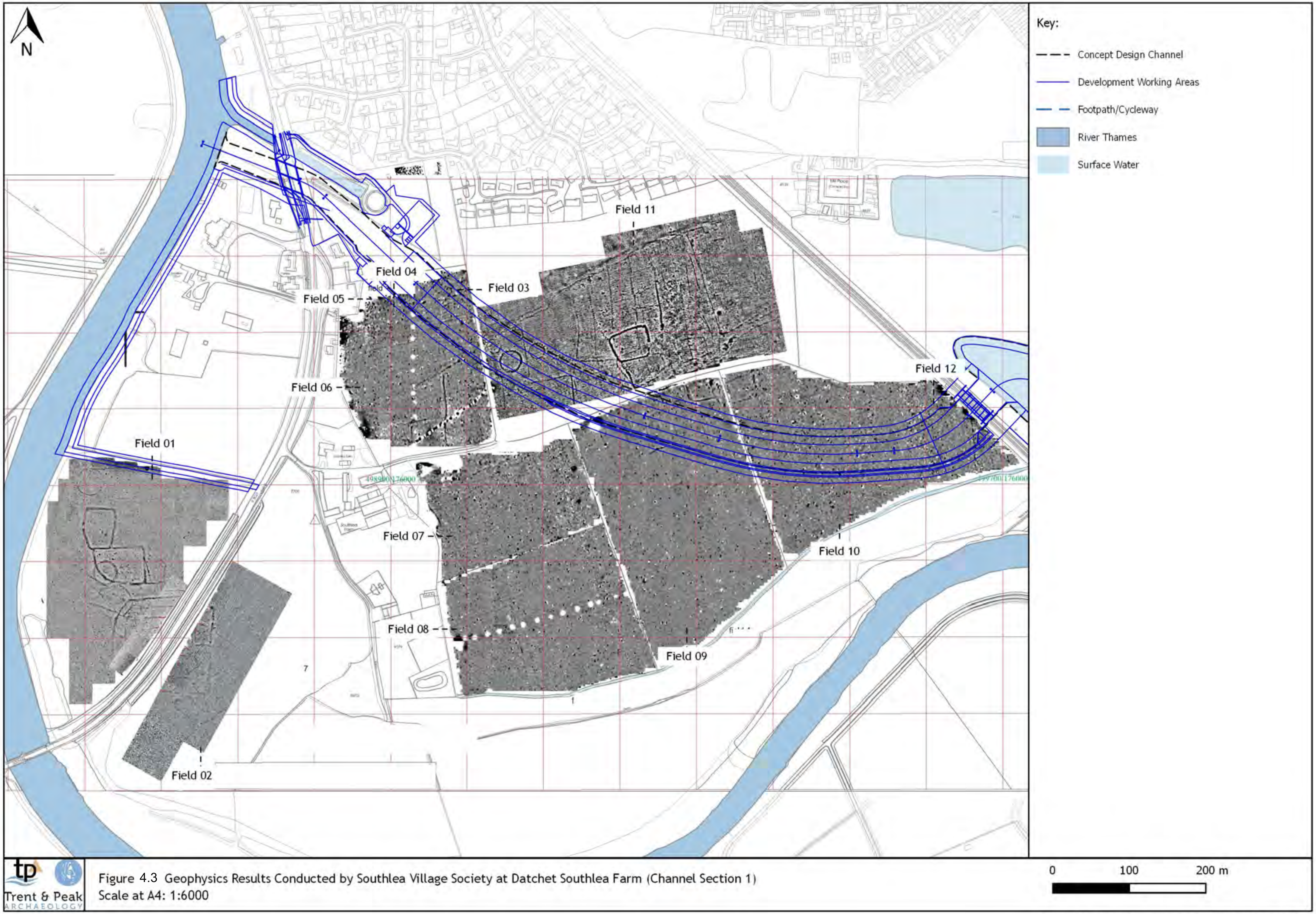
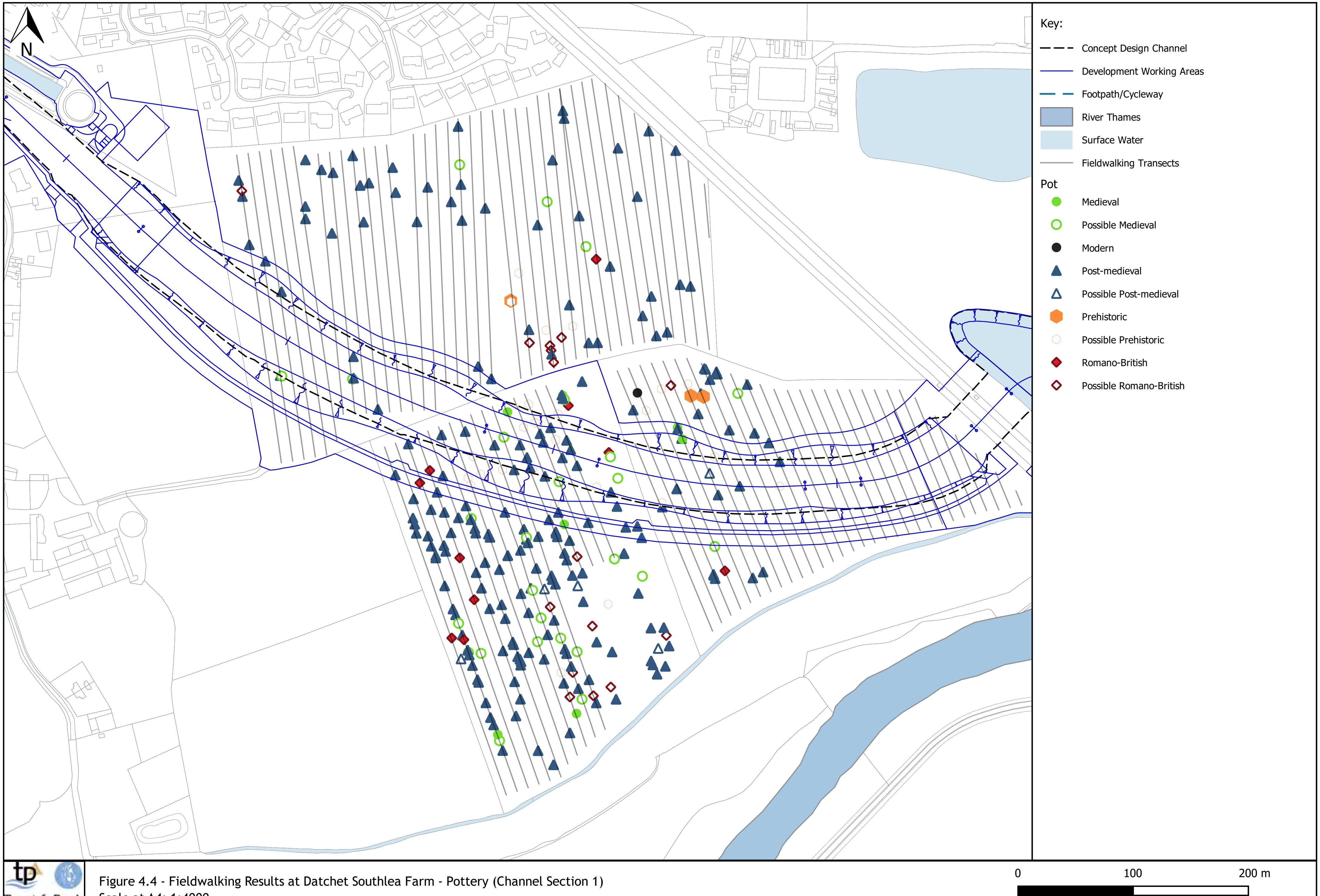


Figure 4.3 Geophysics Results Conducted by Southlea Village Society at Datchet Southlea Farm (Channel Section 1)
Scale at A4: 1:6000



Trent & Peak Archaeology

Figure 4.4 - Fieldwalking Results at Datchet Southlea Farm - Pottery (Channel Section 1)
Scale at A4: 1:4000

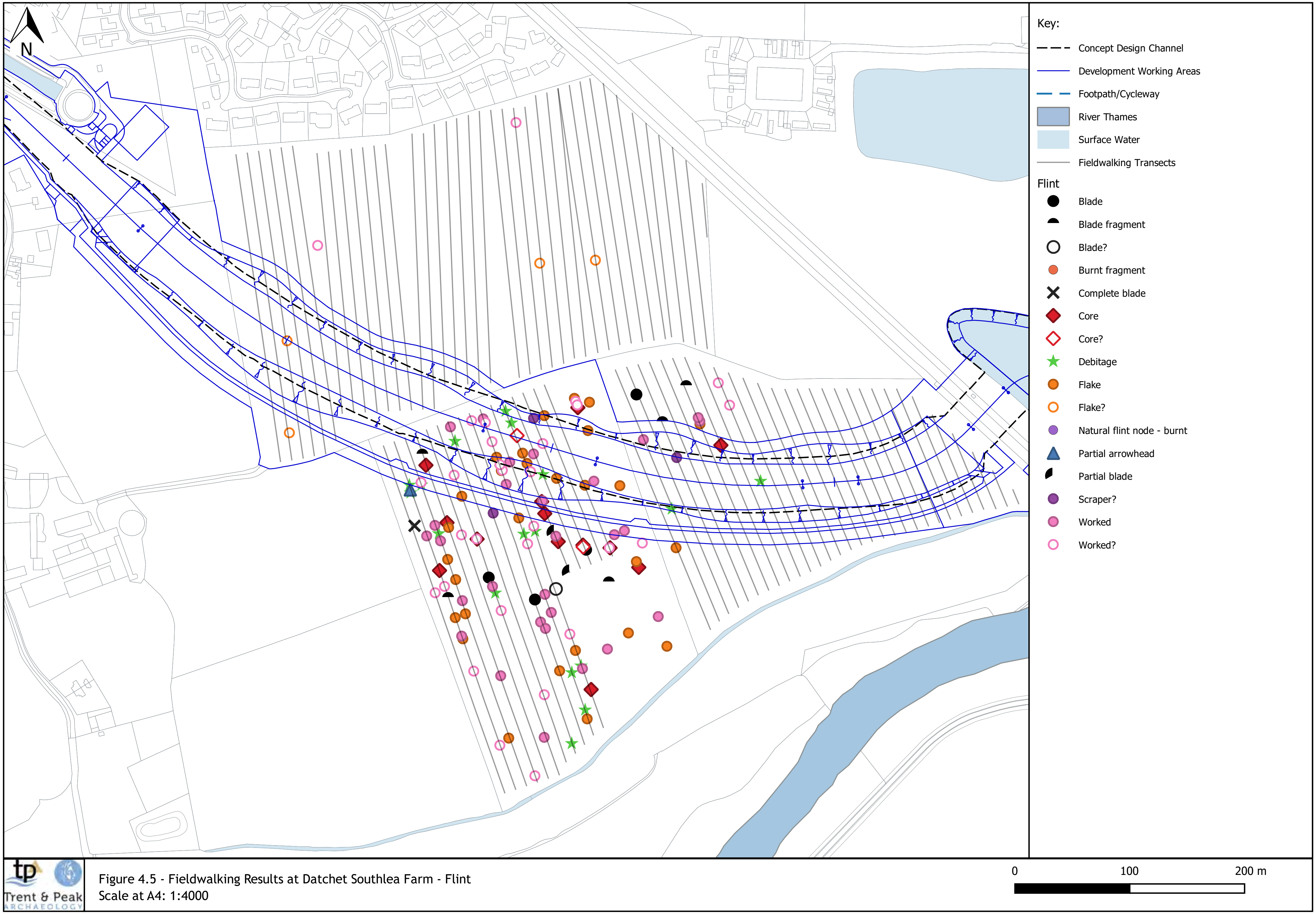


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Figure 4.5 - Fieldwalking Results at Datchet Southlea Farm - Flint
Scale at A4: 1:4000

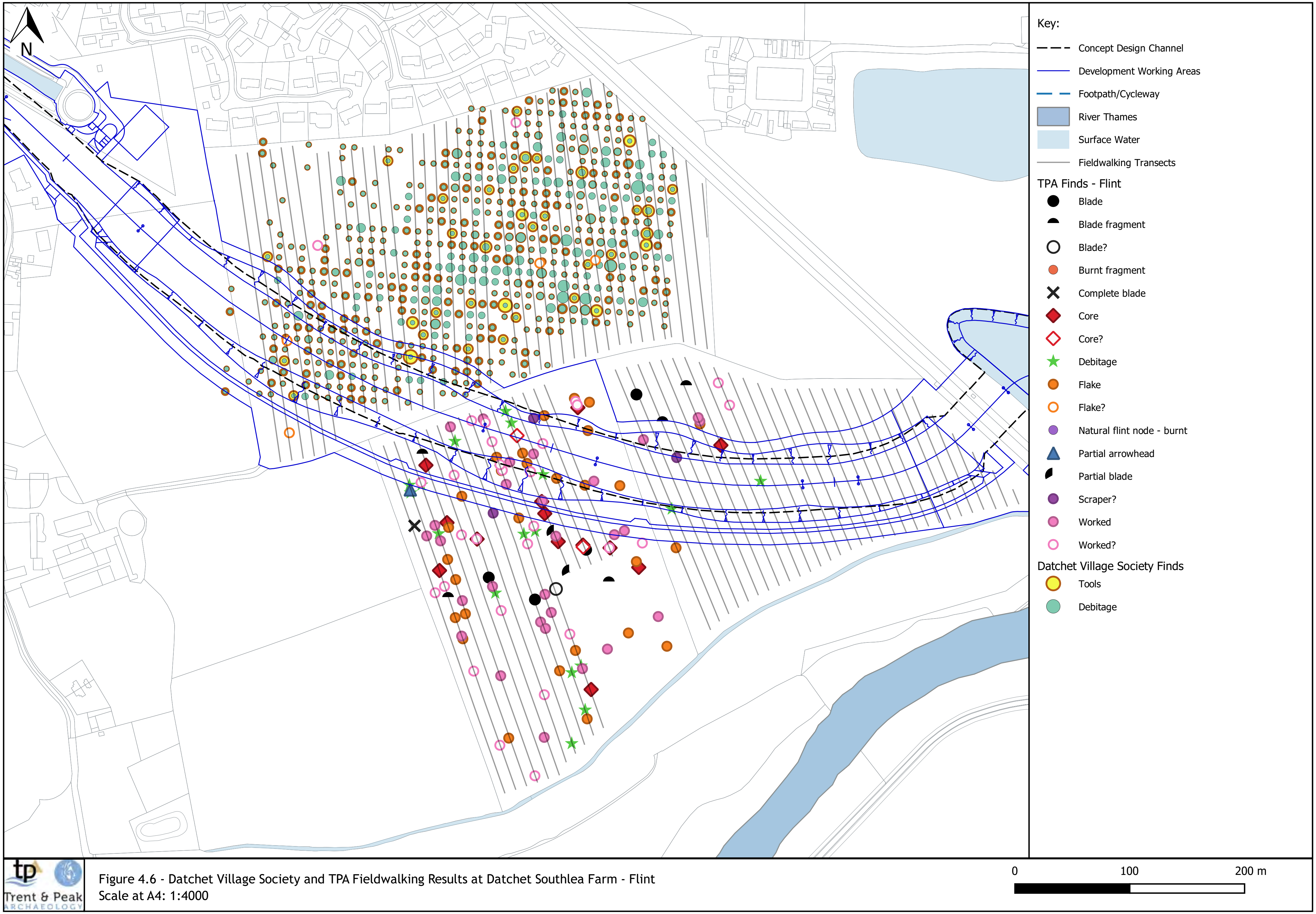

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Figure 4.6 - Datchet Village Society and TPA Fieldwalking Results at Datchet Southlea Farm - Flint
Scale at A4: 1:4000

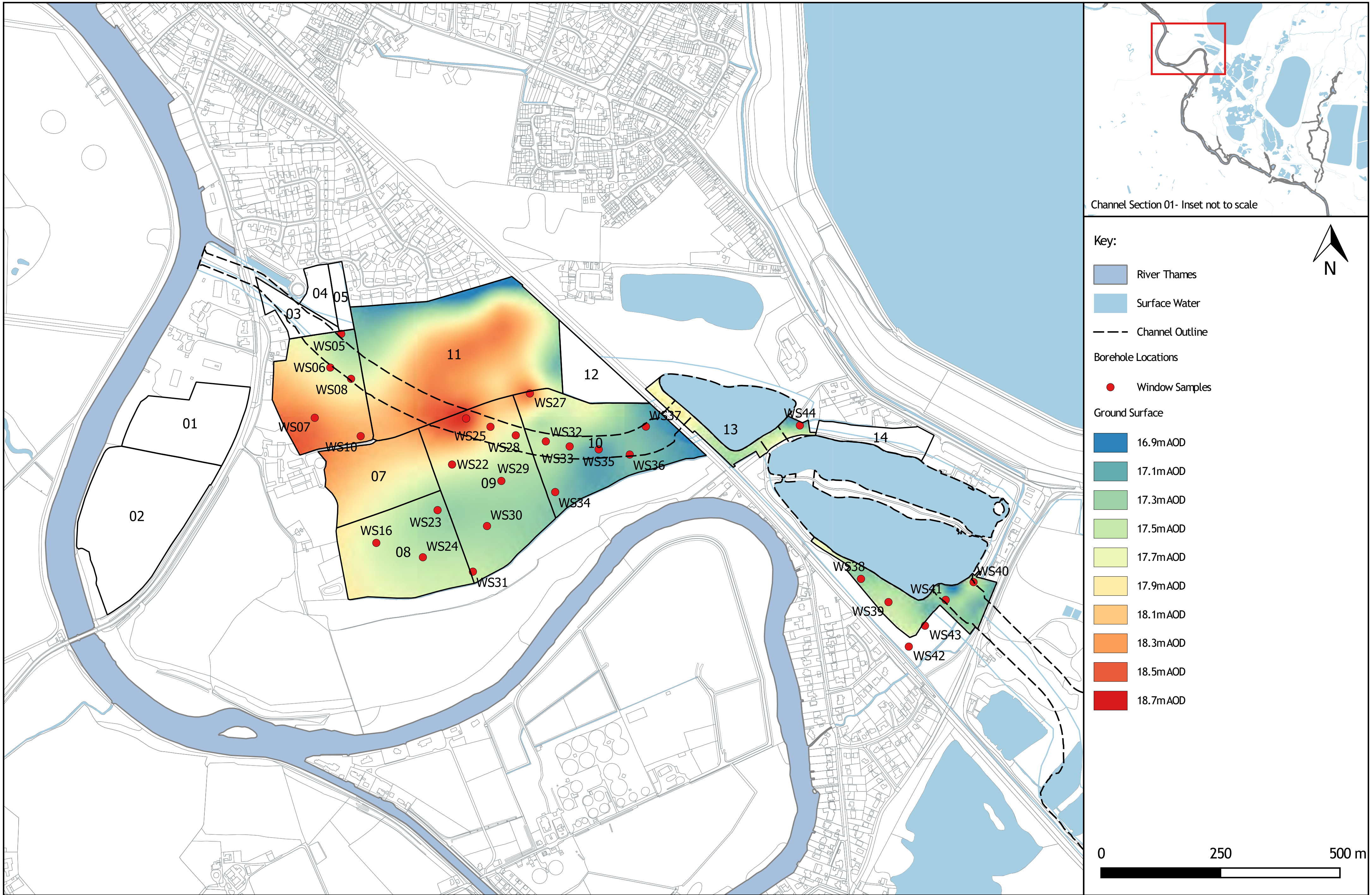

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Figure 4.7 - Ground Surface Level and Borehole Locations at Southlea Farm and Datchet Lakes Scale at A4: 1:10000

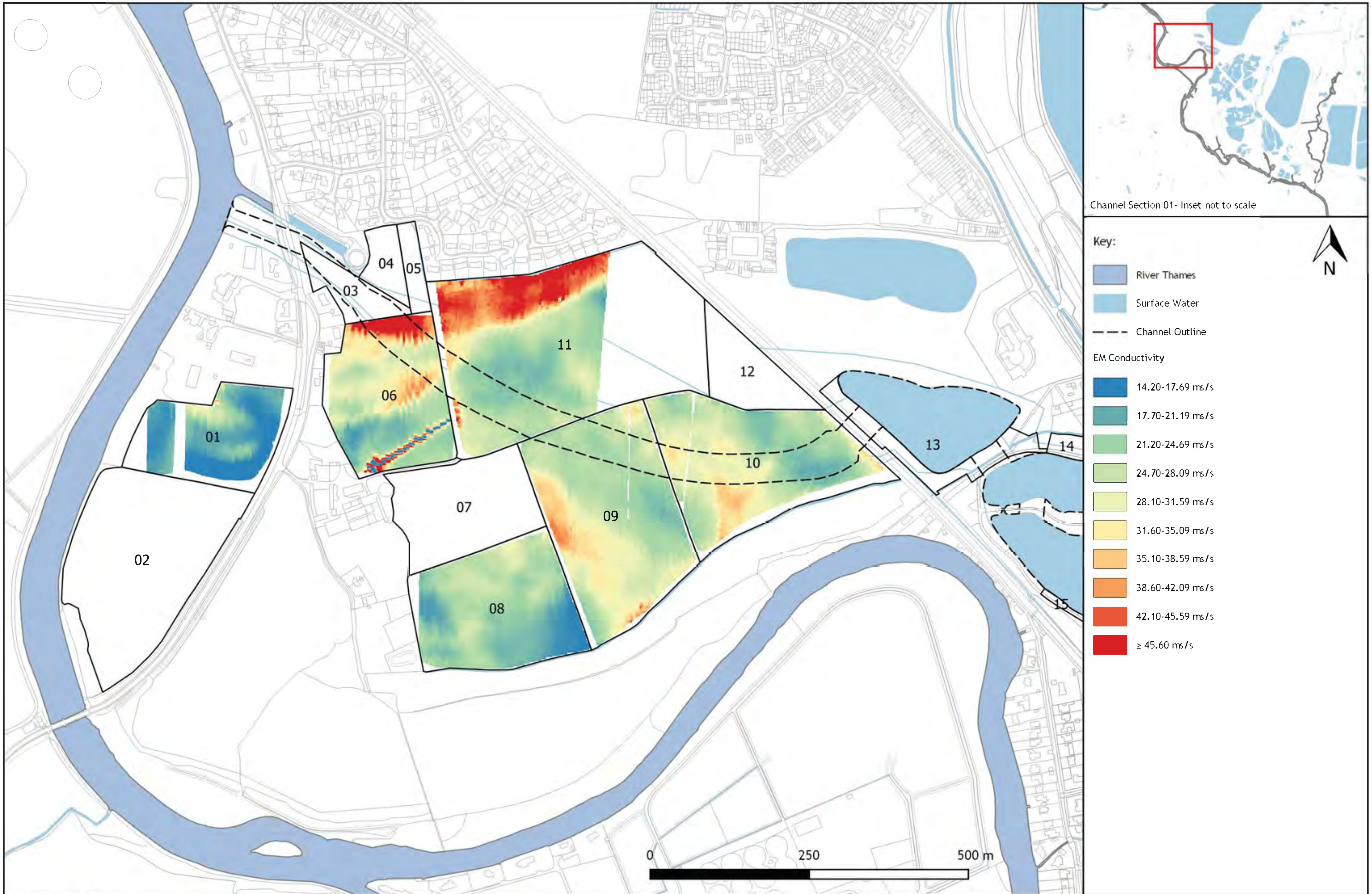

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Figure 4.8 - EM Conductivity Results From Southlea Farm, Datchet. Scale at A4: 1:7500

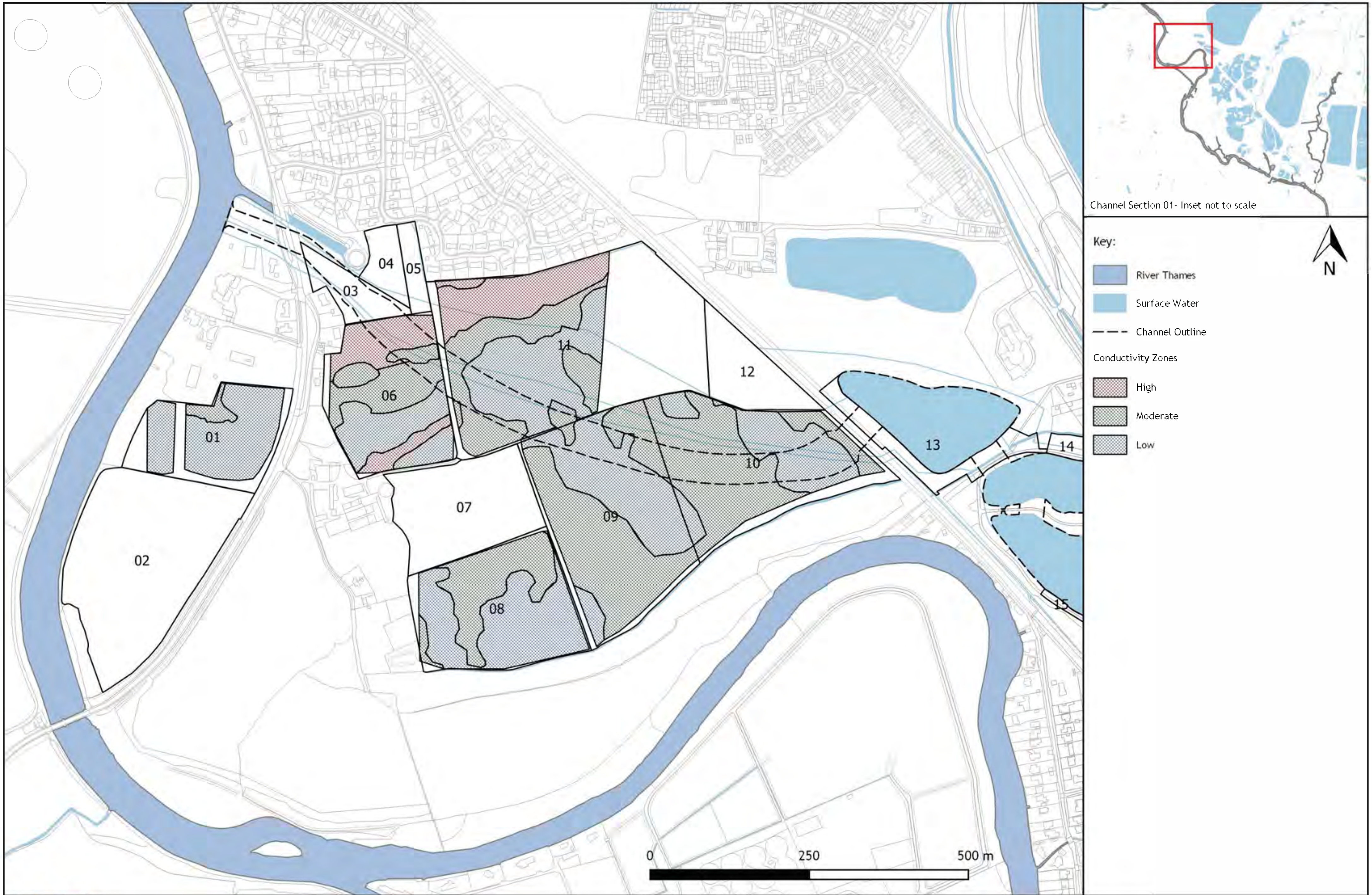

Figure 4.9 - EM Conductivity Zones at Southlea Farm, Datchet.
Scale at A4: 1:7500

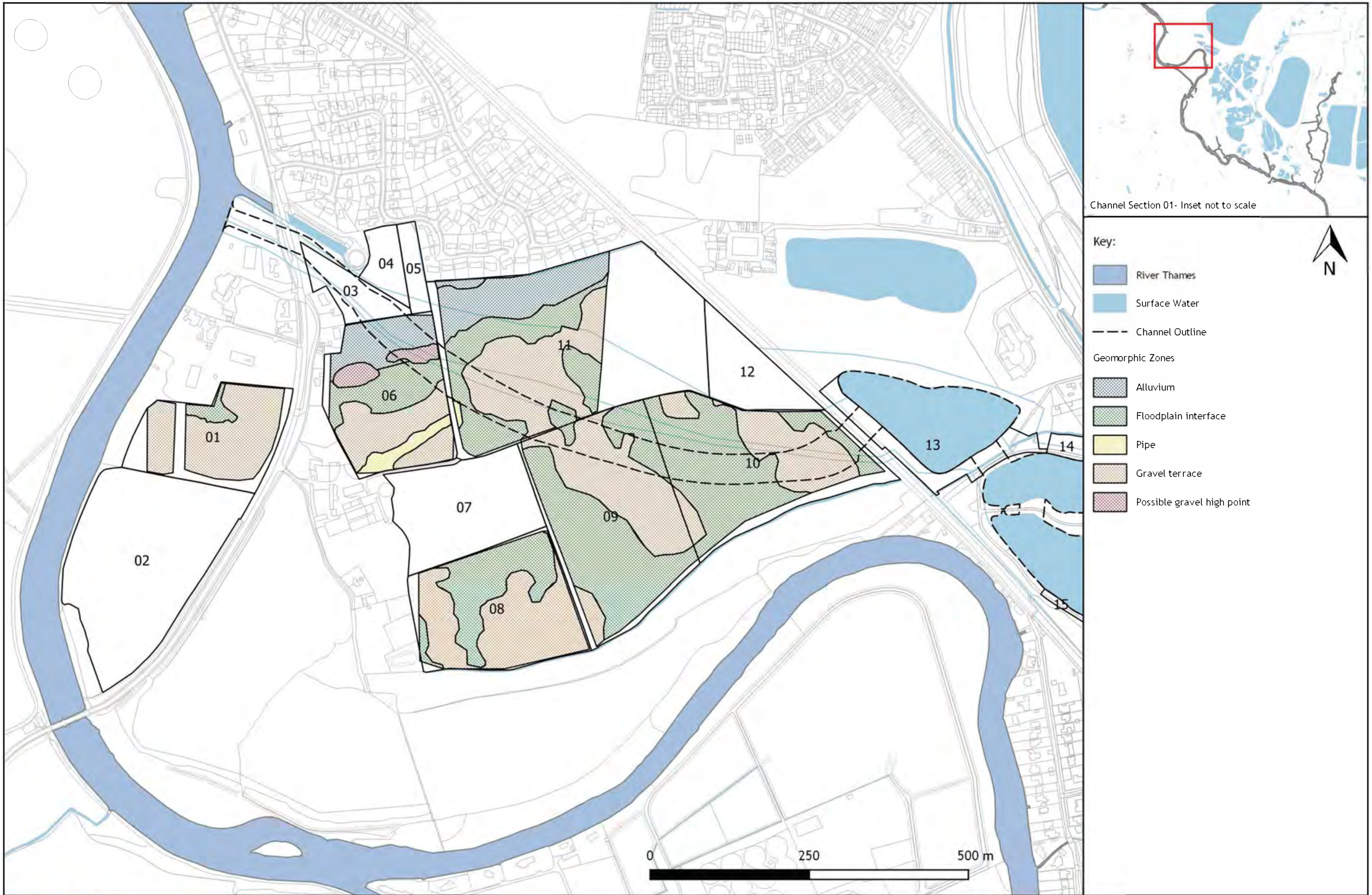

Figure 4.10 - Geomorphic Zones at Southlea Farm, Datchet.
Scale at A4: 1:7500

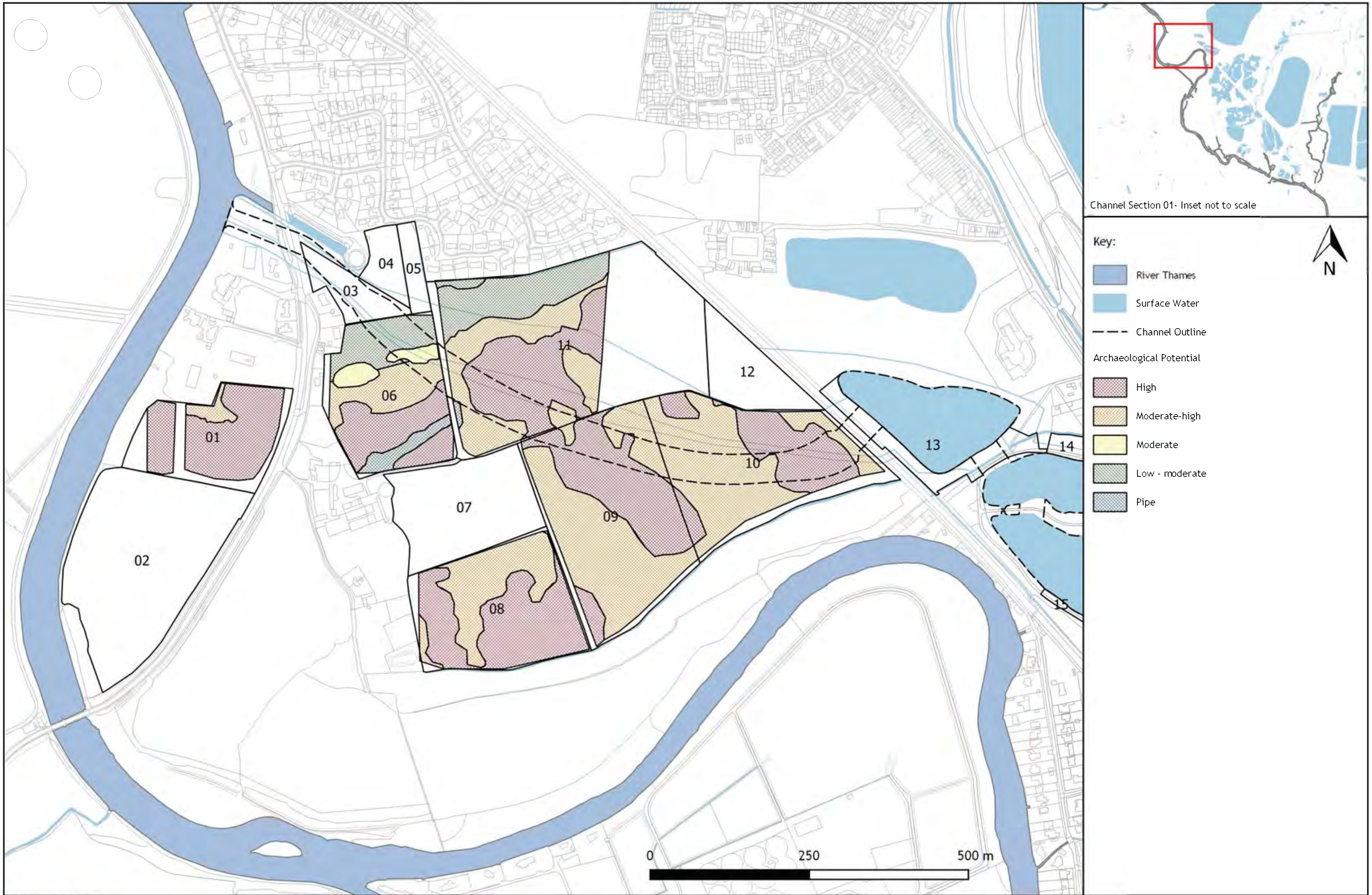

Figure 4.11 - Archaeological Potential Zones at Southlea Farm, Datchet
Scale at A4: 1:7500

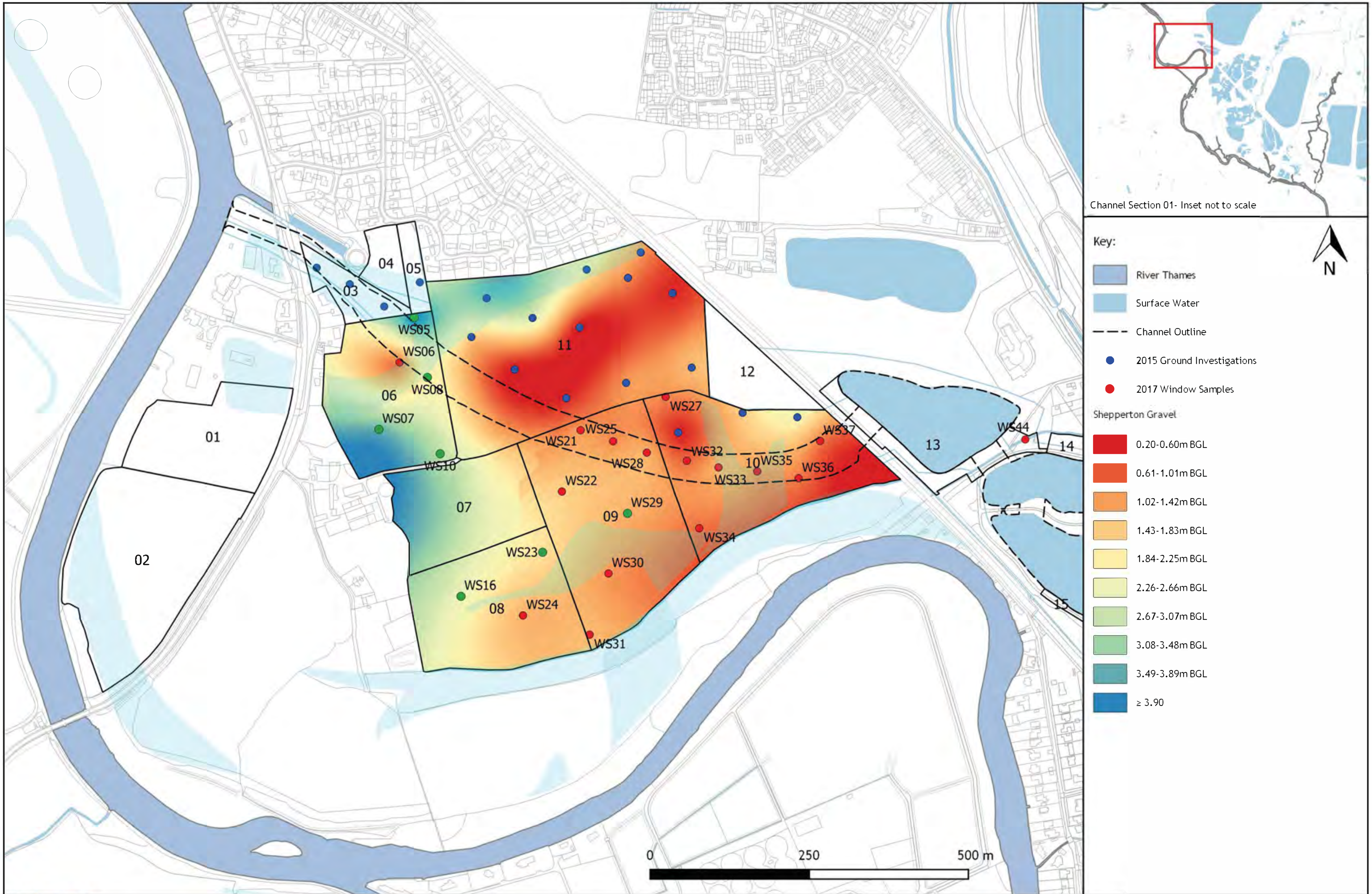

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Figure 4.12 - Depth of the top of Shepperton Gravel from Southlea Farm, Datchet.
Scale at A4: 1:7500

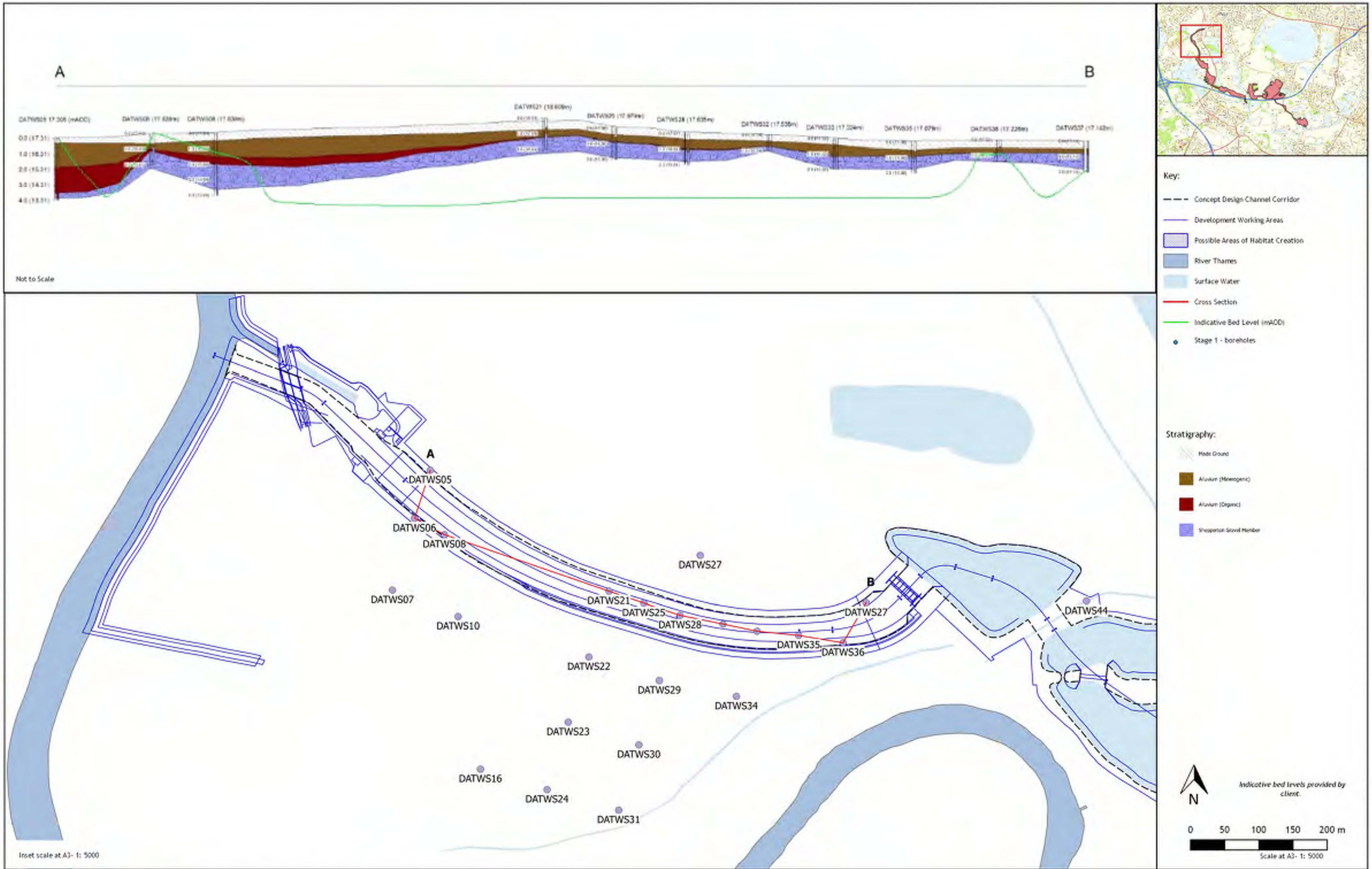

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Figure 4.13 - Transect Section A-B of RTS stage 1 boreholes Indicative Bed Level Depths- Channel Section 1 (Datchet Southlea Farm)
Scale at A3: varies

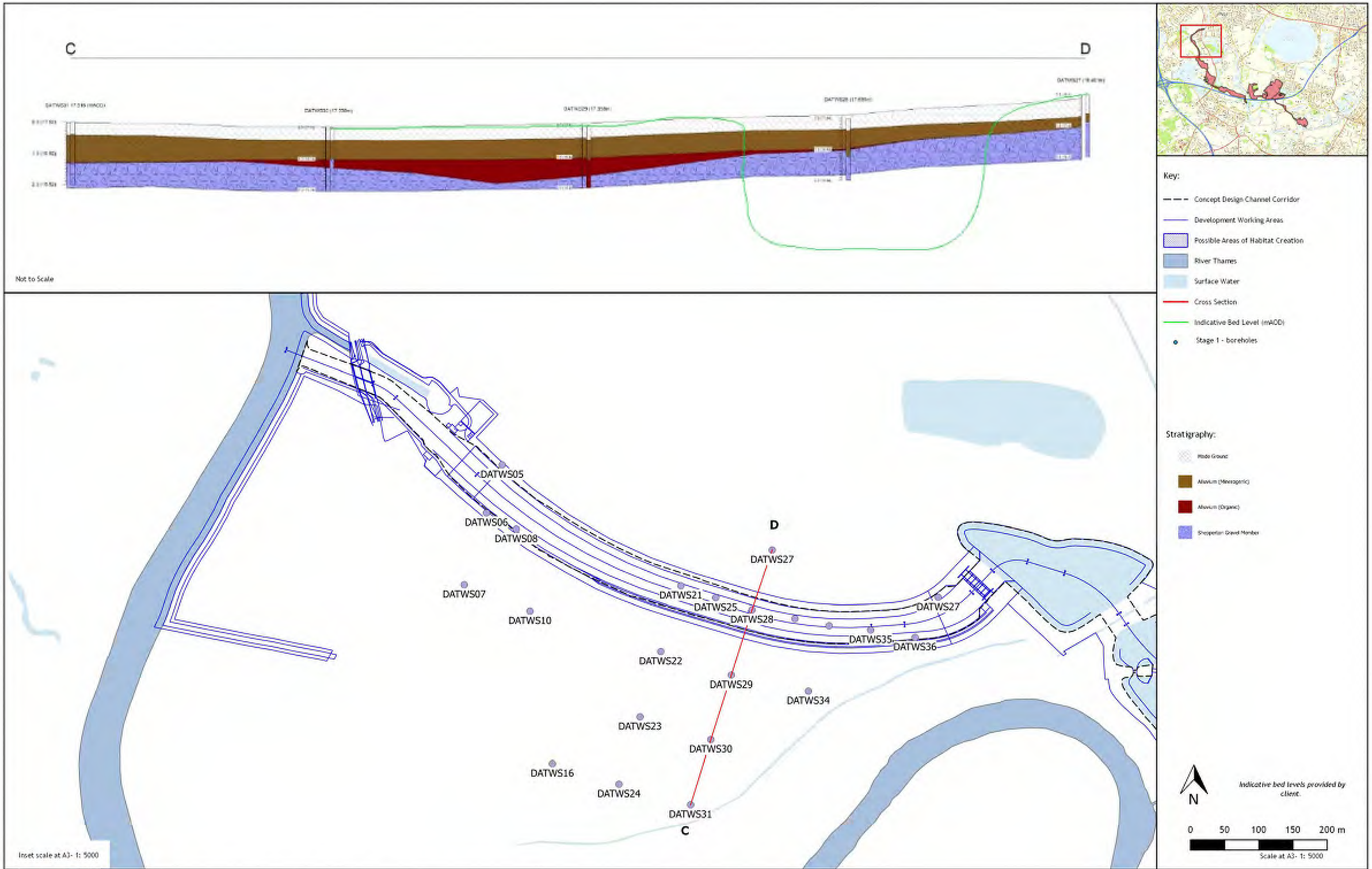

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Figure 4.14- Transect Section C-D of RTS stage 1 boreholes Indicative Bed Level Depths- Channel Section 1 (Datchet Southlea Farm)
Scale at A3: varies

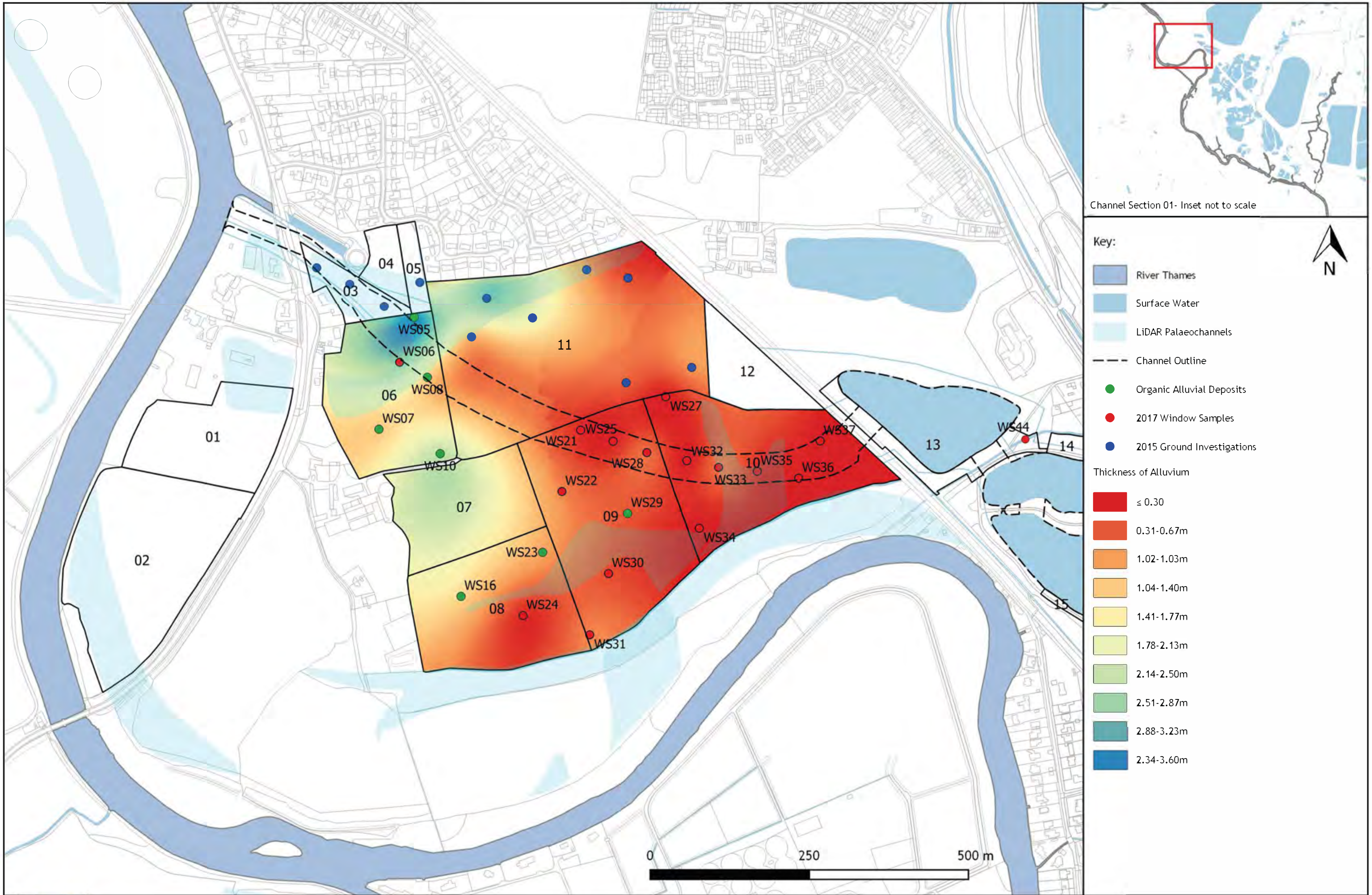

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Figure 4.15 -Thickness of Alluvial Deposits at Southlea Farm, Datchet.
Scale at A4: 1:7500

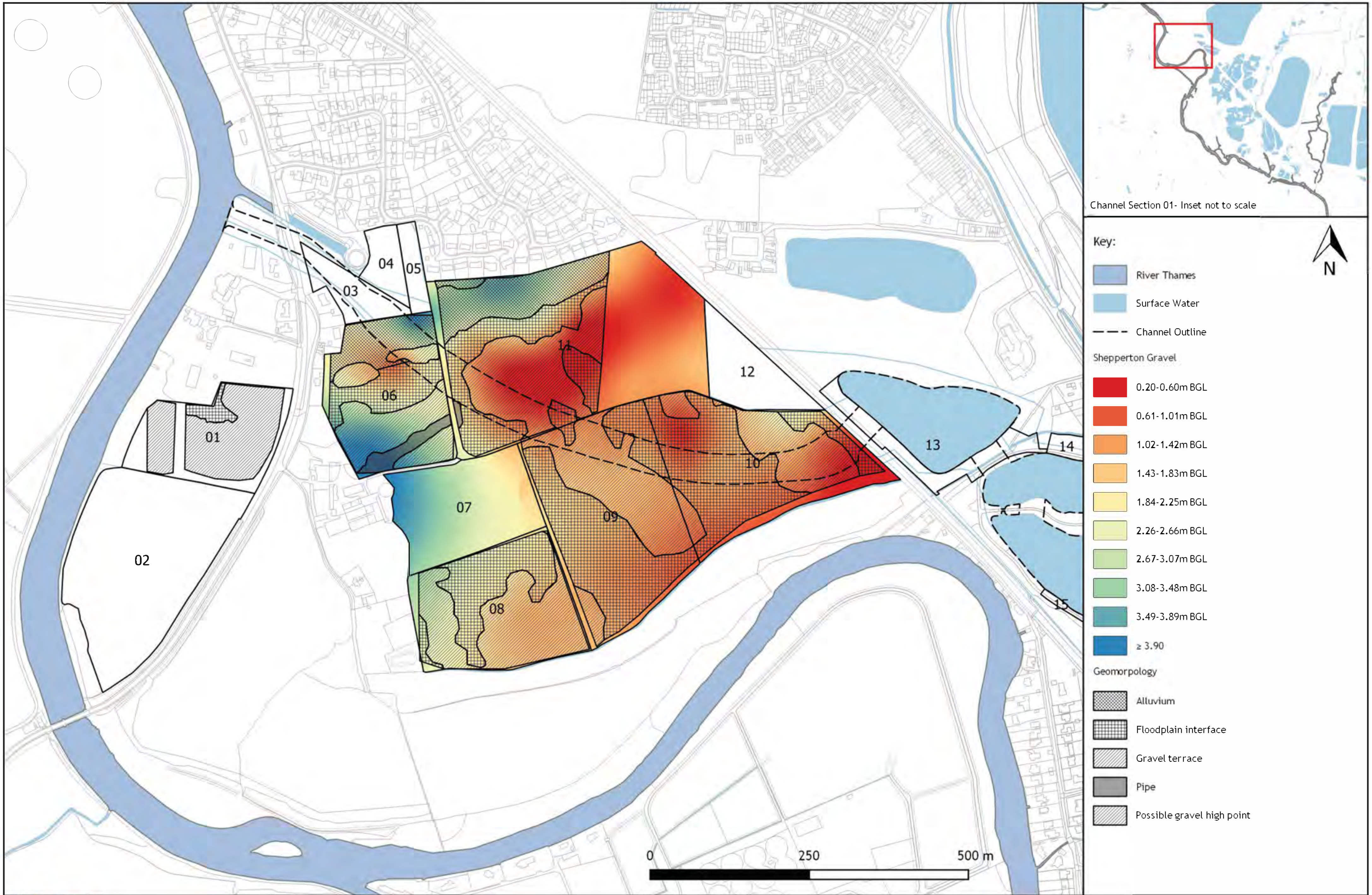

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Figure 4.16 - Depth of Shepperton Gravel and Geomorphic Zones at Southlea Farm, Datchet. Scale at A4: 1:7500

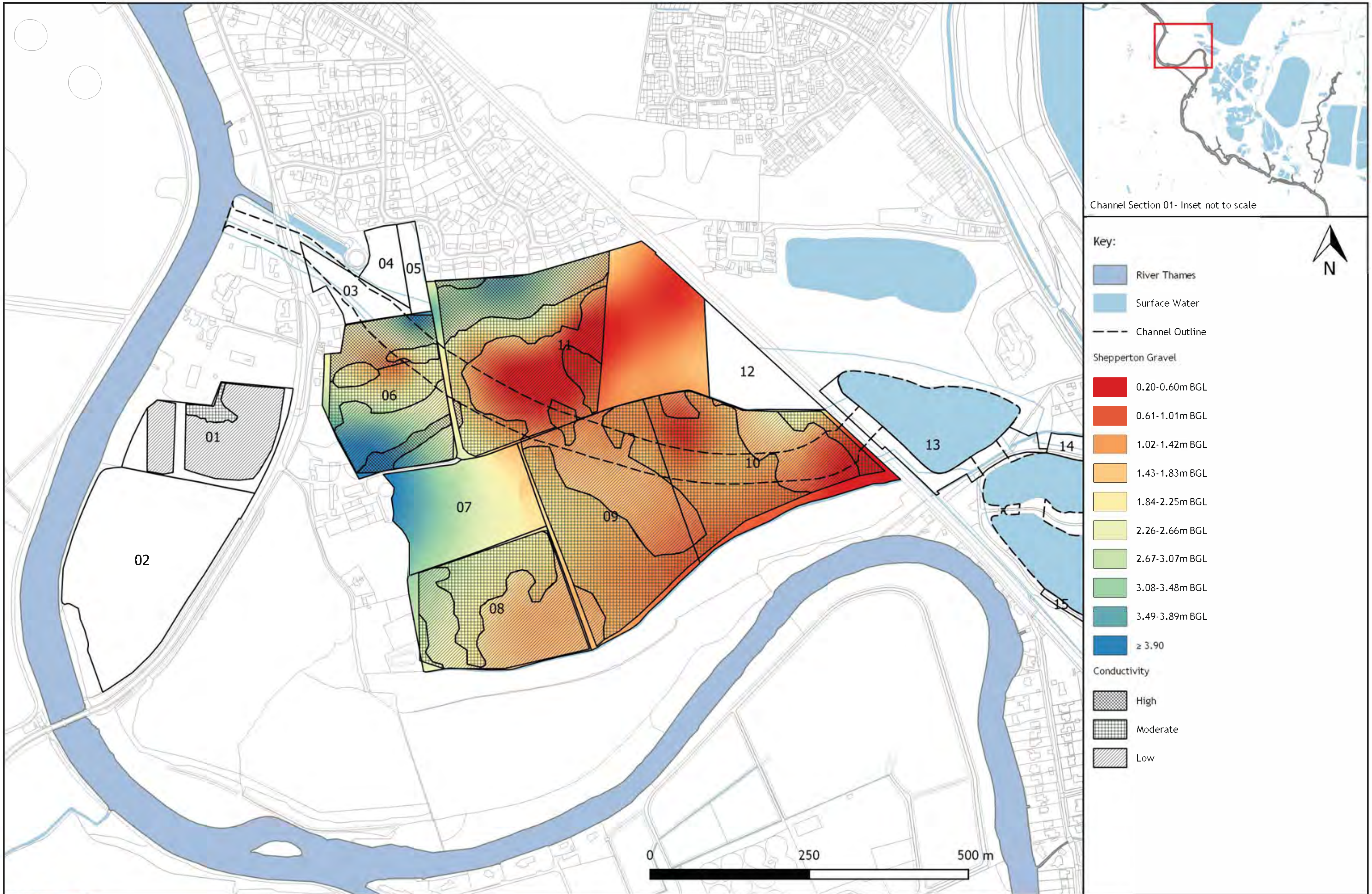

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Figure 4.17 - Depth of Shepperton Gravel and Conductivity Zones at Southlea Farm, Datchet. Scale at A4: 1:7500

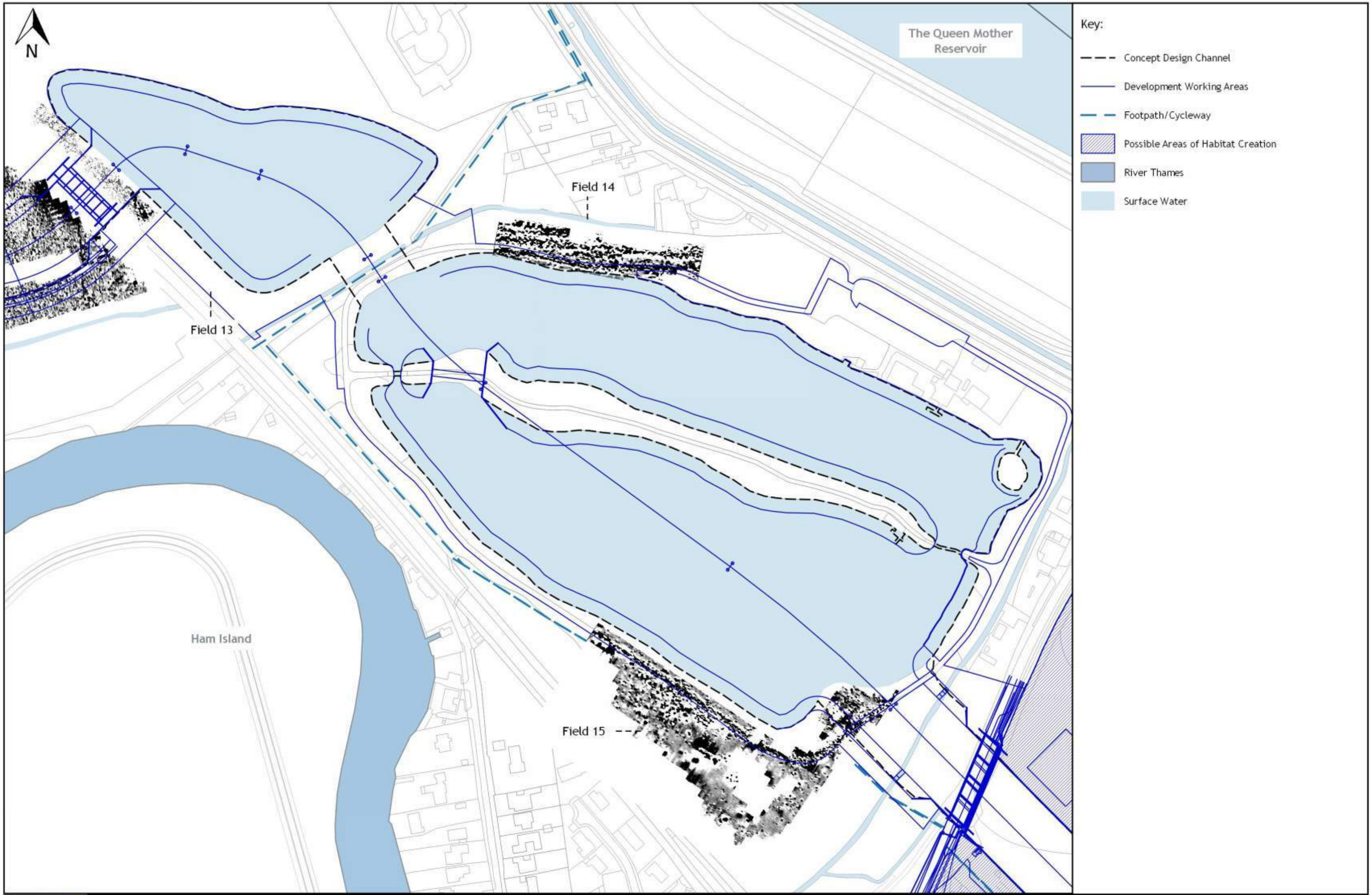

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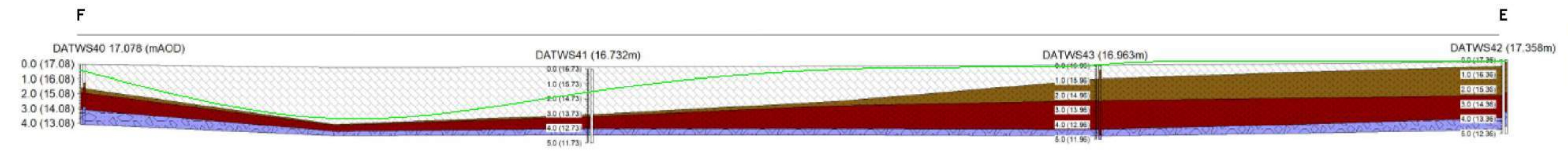
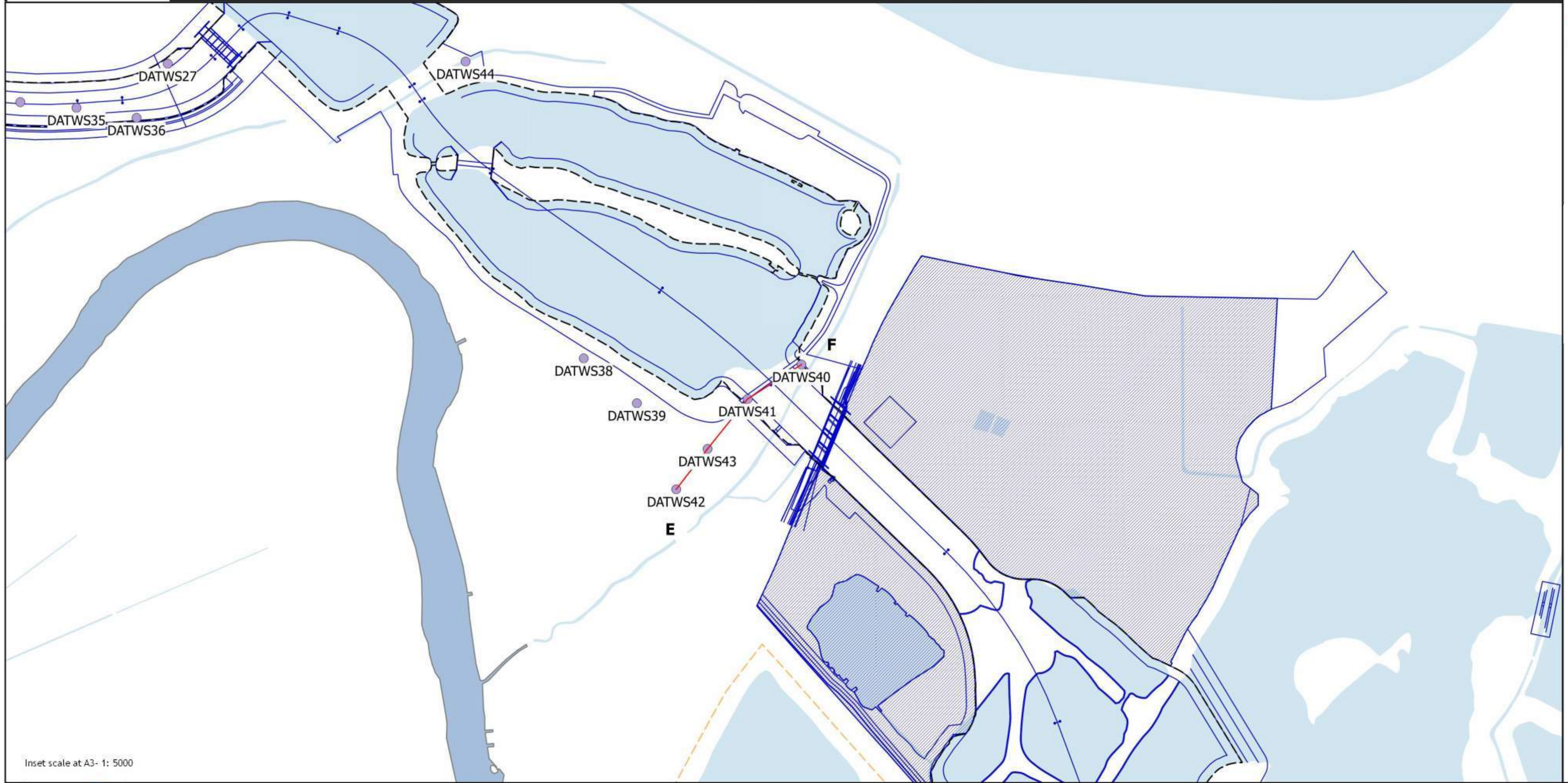
Figure 5.1 - Geophysics Results at Datchet Lakes (Channel Section 1)
Scale at A4: 1:3500

0 100 200 m





Key:

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- River Thames
- Surface Water
- Cross Section
- Indicative Bed Level (mAOD)
- Stage 1 - boreholes

Stratigraphy:

- Made Ground
- Alluvium (Minerogenic)
- Alluvium (Organic)
- Shepperton Gravel Member

N

Indicative bed levels provided by client.

0 50 100 150 200 m

Scale at A3- 1: 5000

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Figure 5.2 - Transect Section E-F of RTS stage 1 boreholes Indicative Bed Level Depths- Channel Section 1 (Datchet Lakes)
Scale at A3: varies

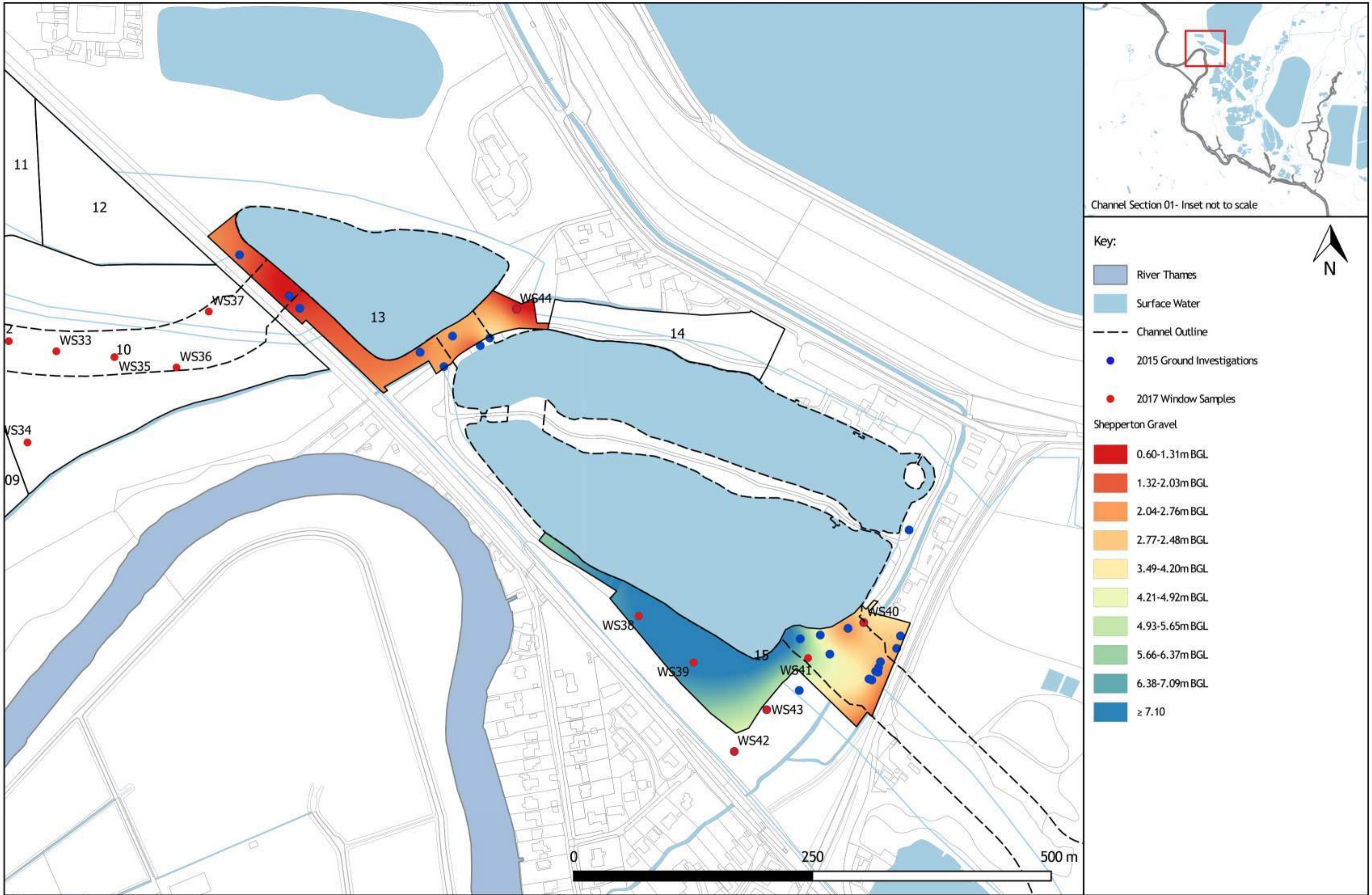

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Figure 5.3 Depth of Shepperton Gravel at Datchet Lakes, Datchet.
Scale at A4: 1:5000

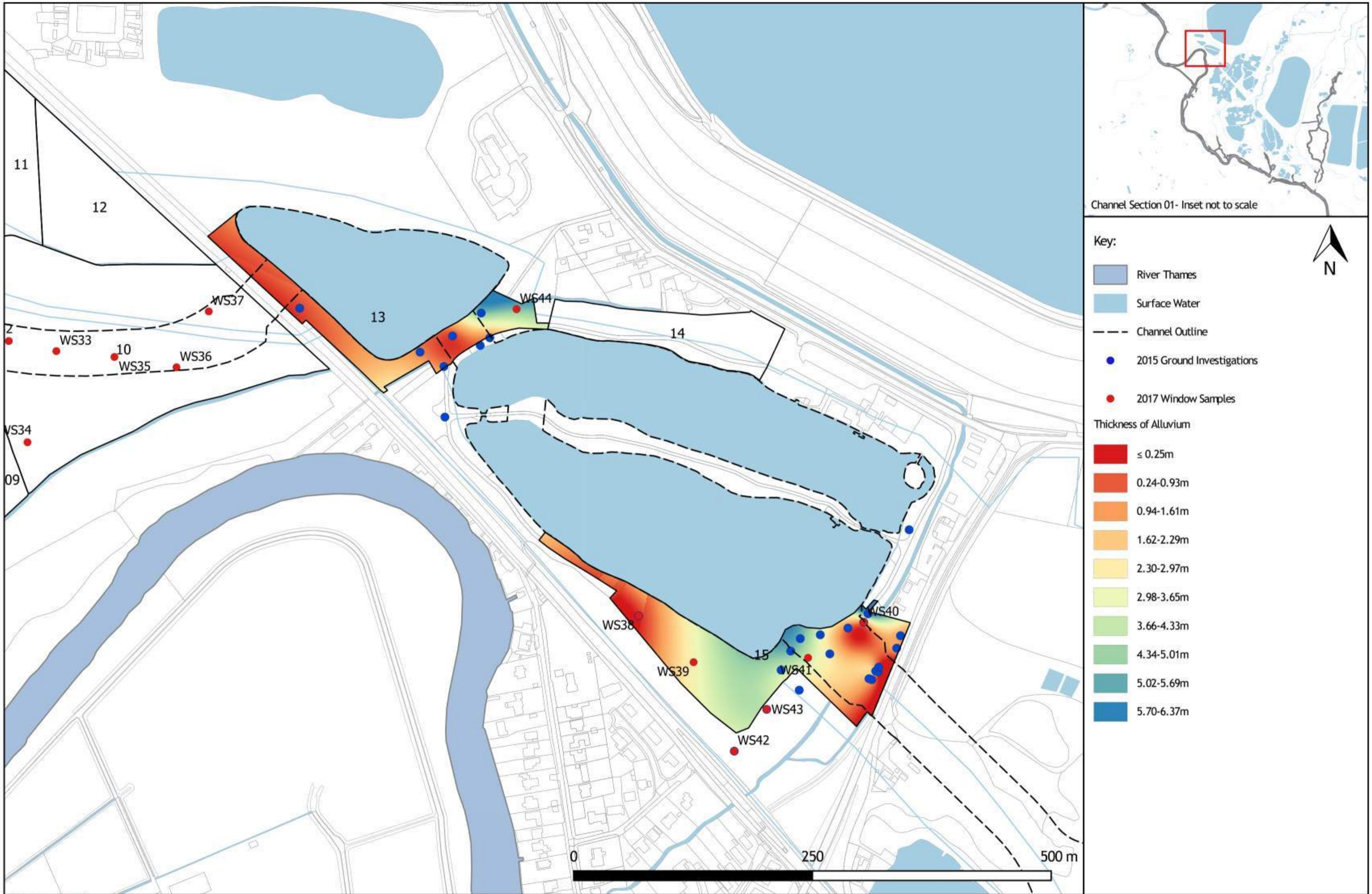

Figure 5.4 Extent of Alluvial Material at Datchet Lakes, Datchet.
Scale at A4: 1:5000

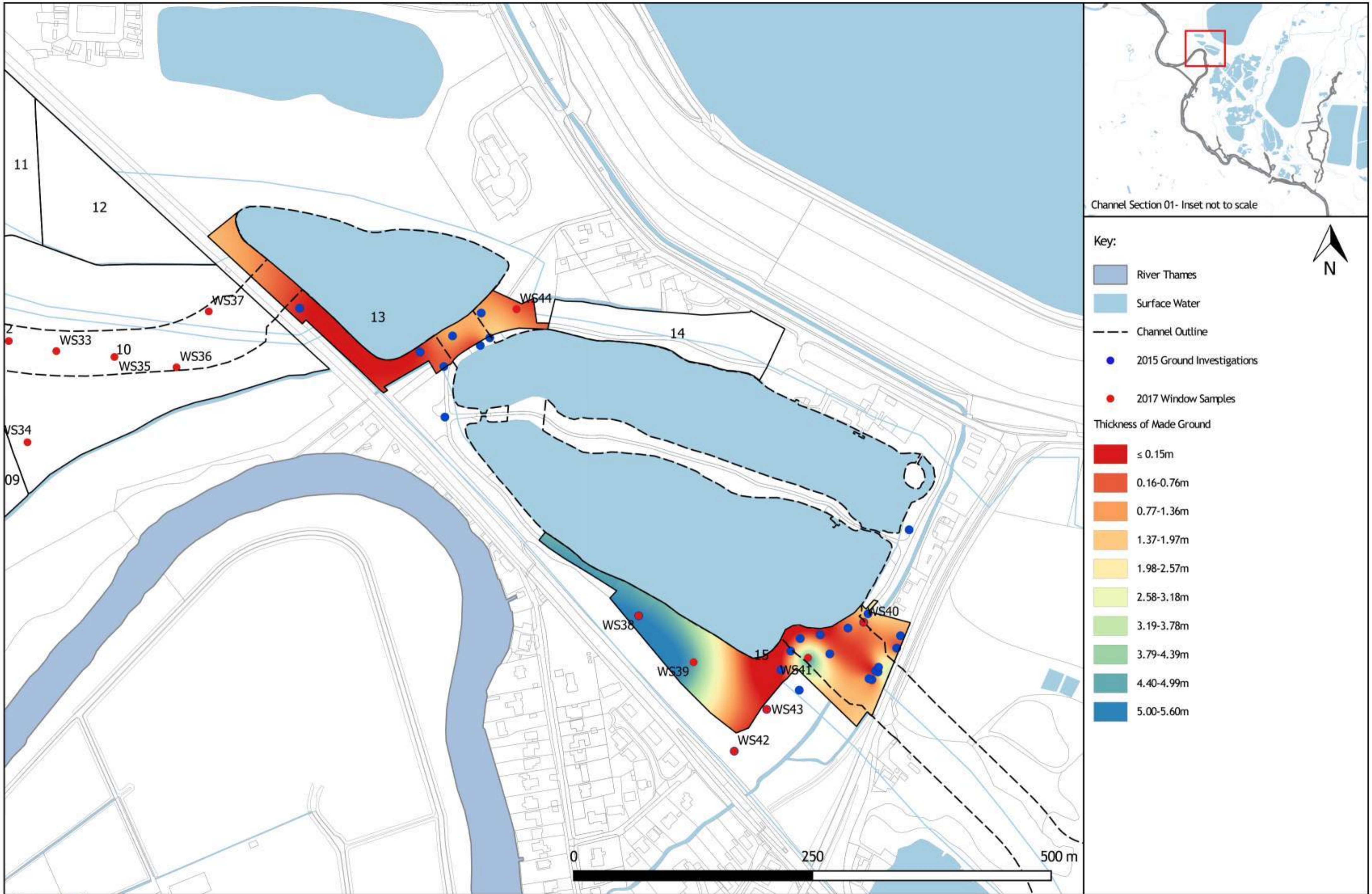

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Figure 5.5 Extent of Made Ground at Datchet Lakes, Datchet.
Scale at A4: 1:5000

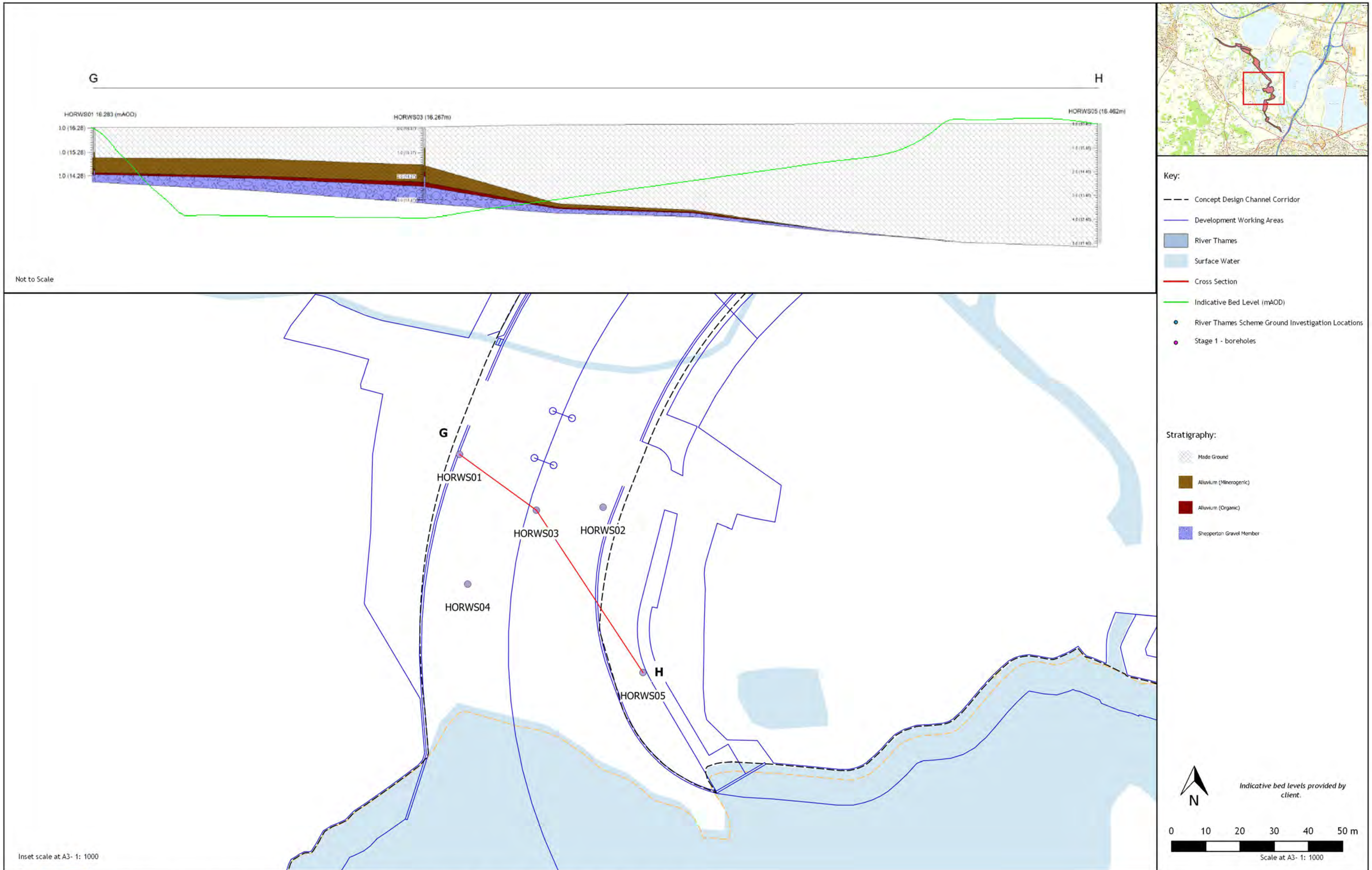

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Figure 6.1 - Transect Section G-H of RTS stage 1 boreholes Indicative Bed Level Depths- Channel Section 1 (Horton)
Scale at A3: varies

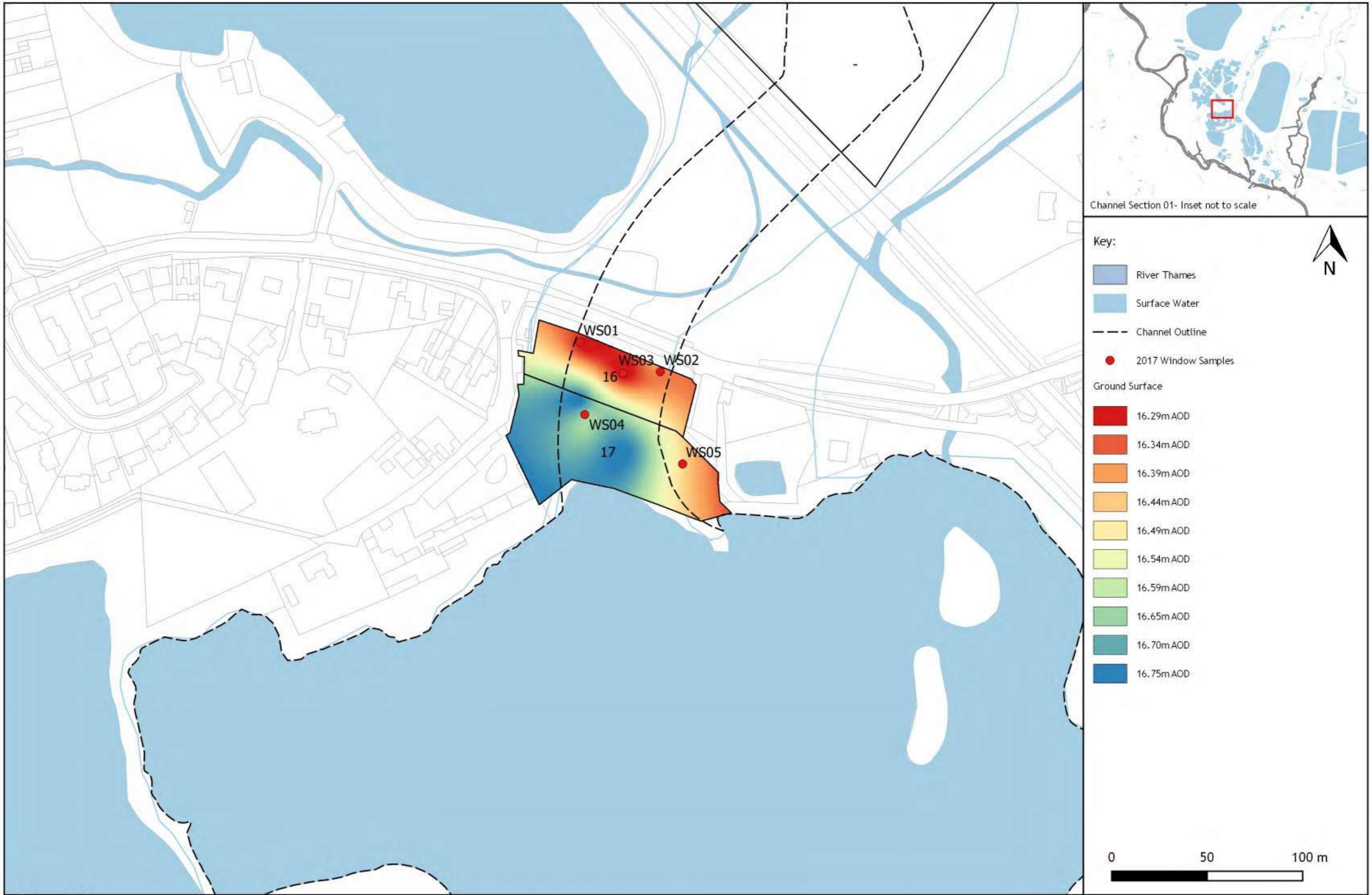

Figure 6.2 Ground Surface Level and Borehole Locations at Horton Station Road, Wraysbury
Scale at A4: 1:2500

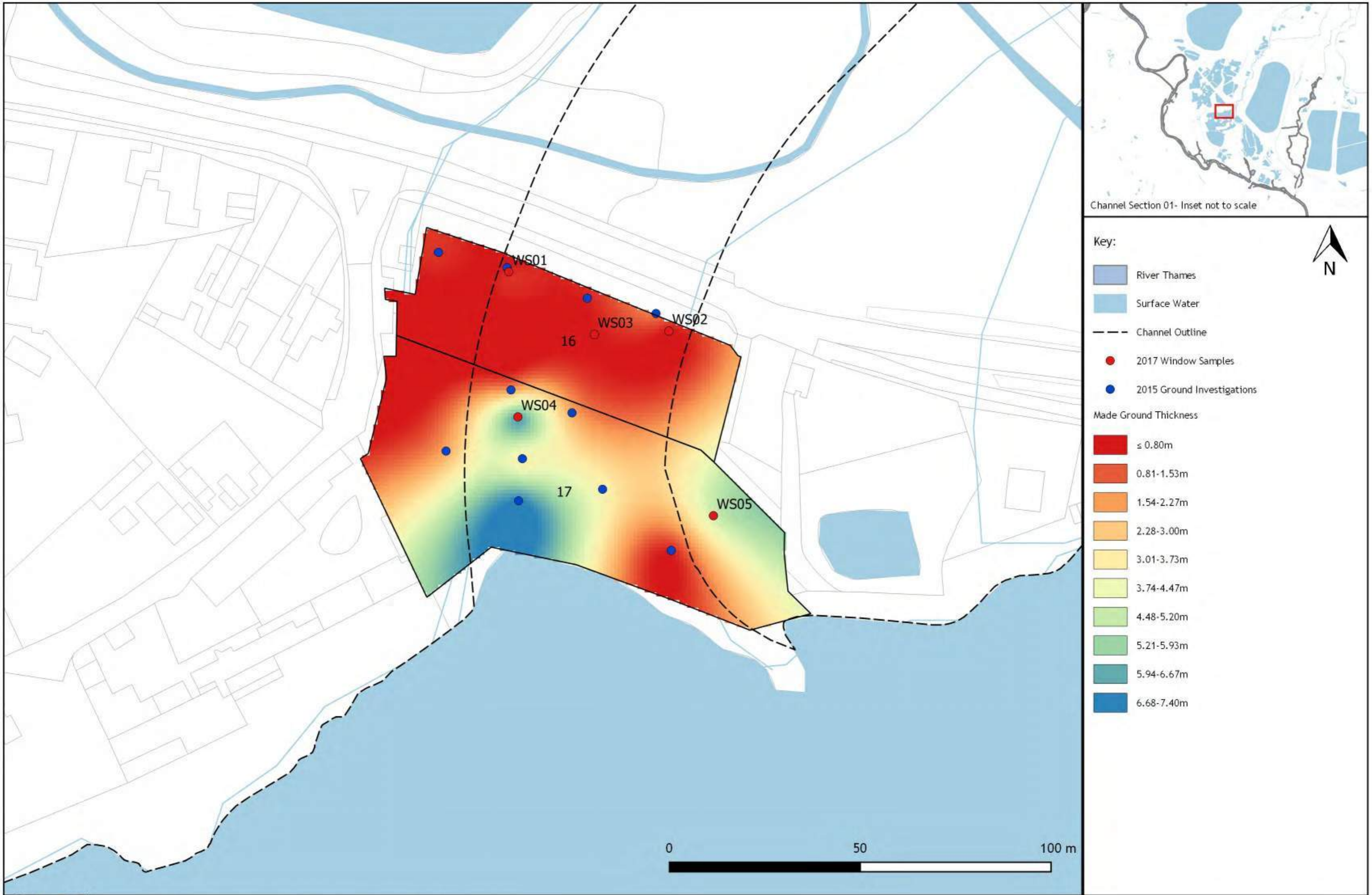

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Figure 6.3 Extent of Made Ground at Horton Station Road, Wraysbury.
Scale at A4: 1:1250

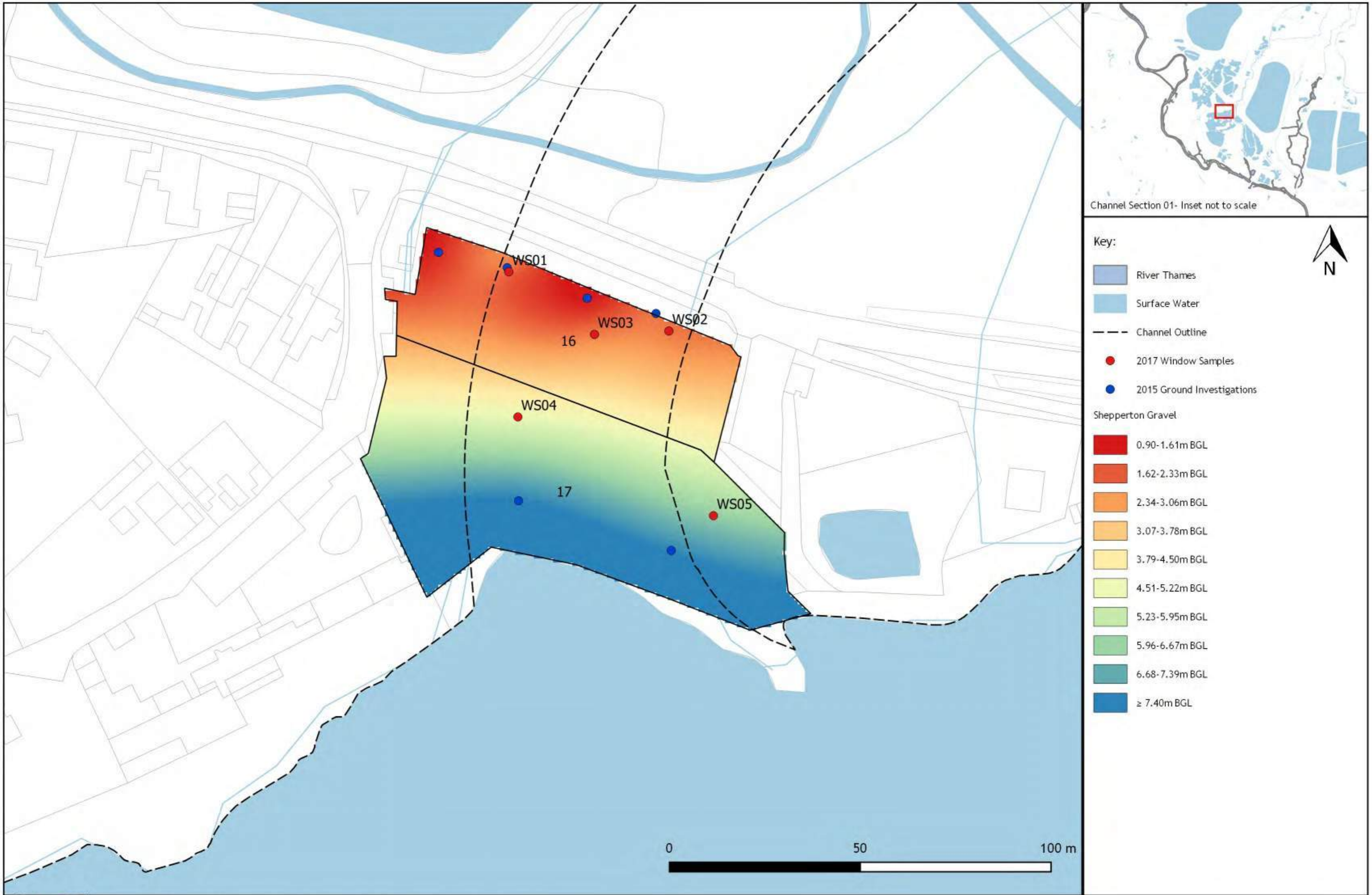

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Figure 6.4 Depth of Shepperton Gravel at Horton Station Road, Wraysbury.
Scale at A4: 1:1250

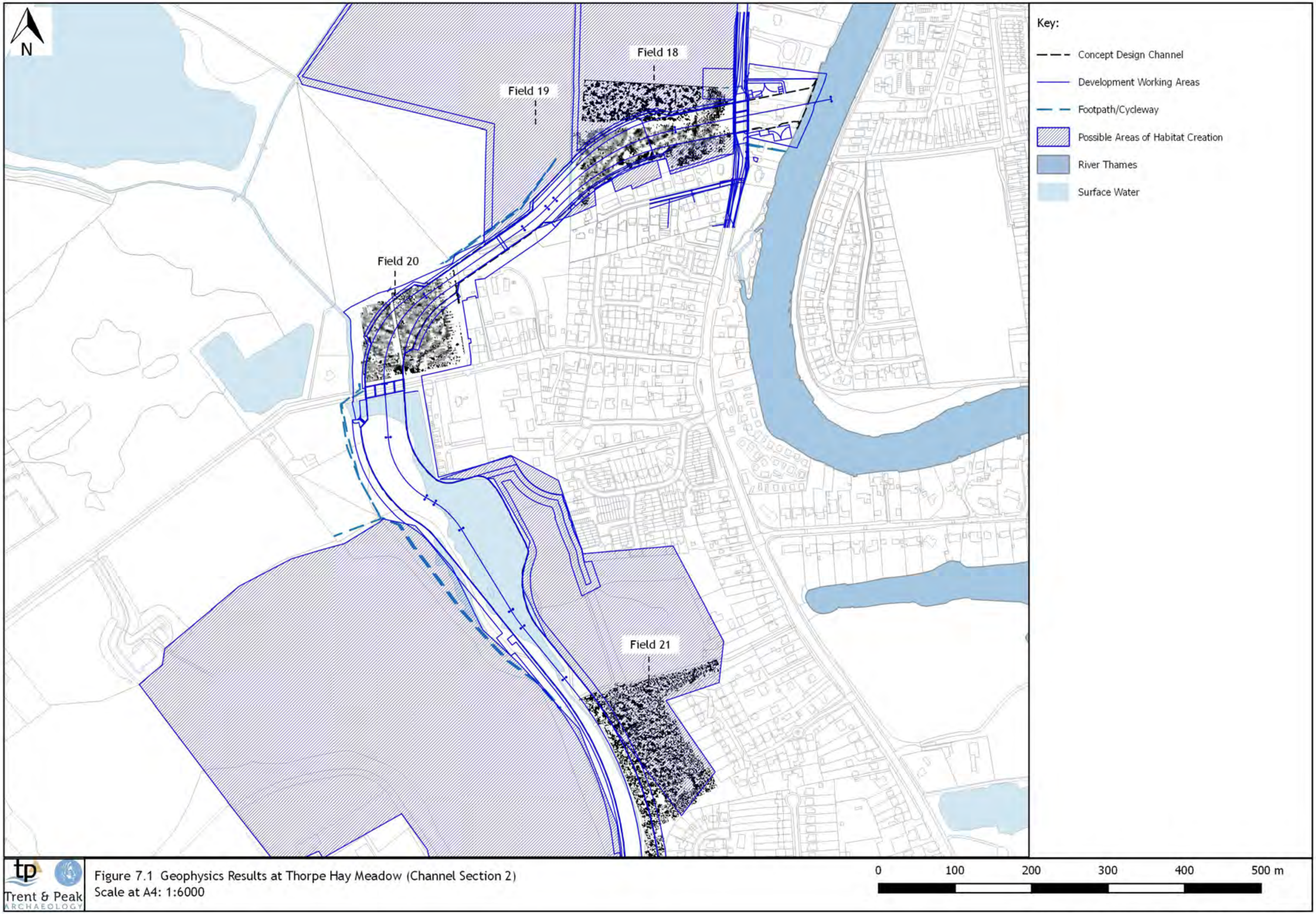

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Figure 7.1 Geophysics Results at Thorpe Hay Meadow (Channel Section 2)
Scale at A4: 1:6000

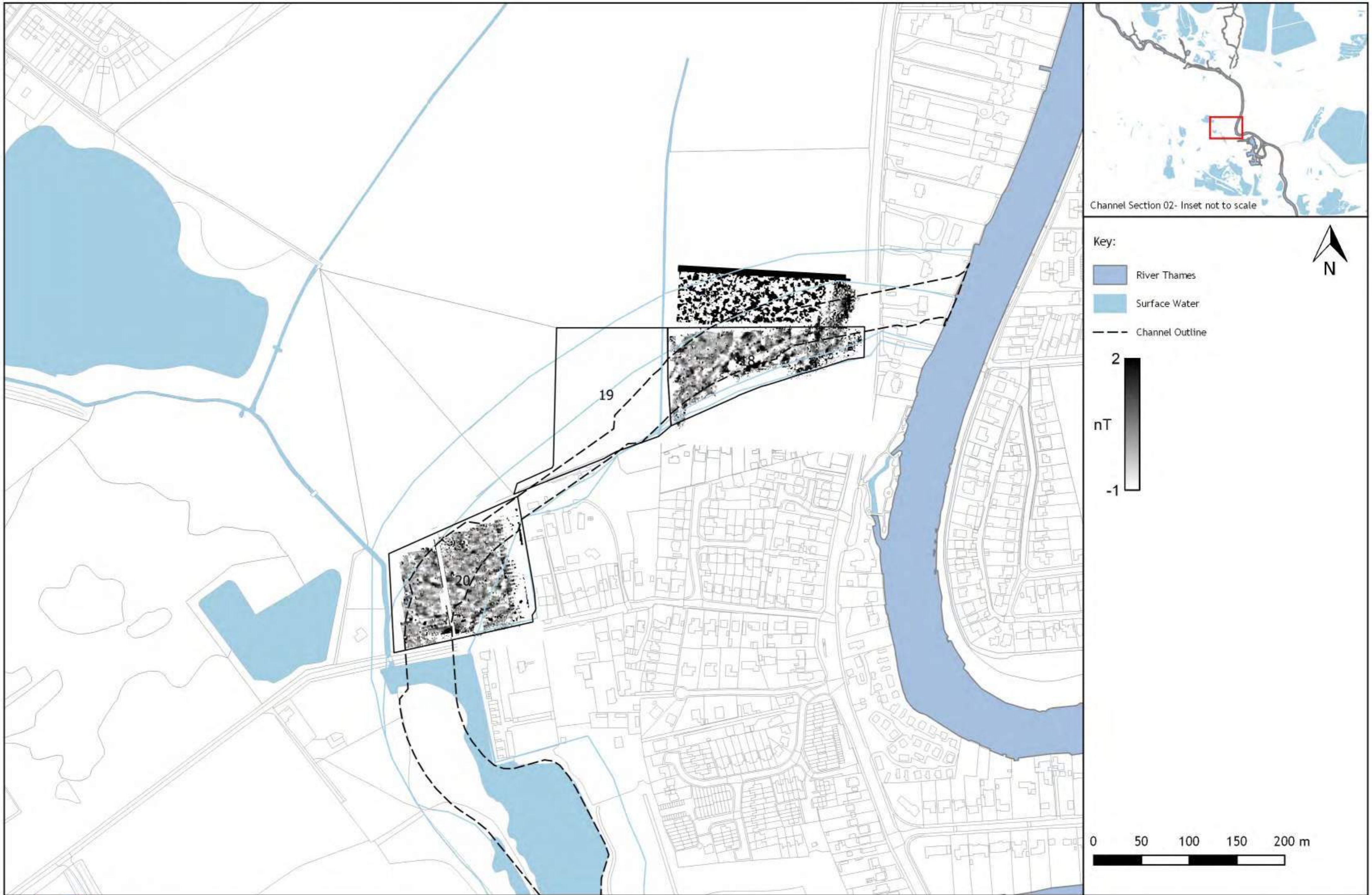

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Figure 7.2 Gradiometer Survey Results from Thorpe Hay Meadow, Egham Hythe.
Scale at A4: 1:5000

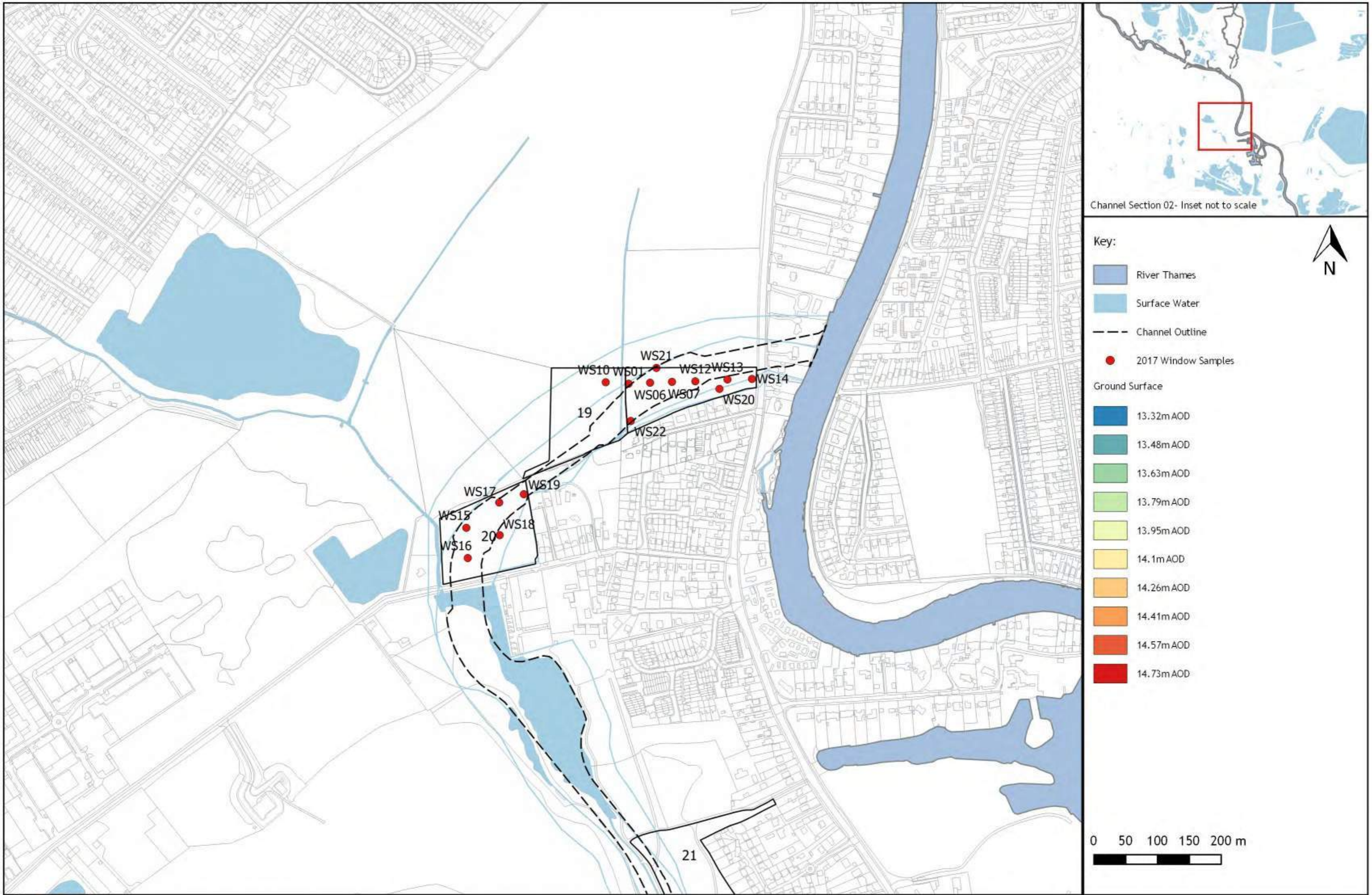

Figure 7.3 Ground Surface Level and Borehole Locations at Thorpe Hay Meadow, Egham Hythe.
Scale at A4: 1:7500

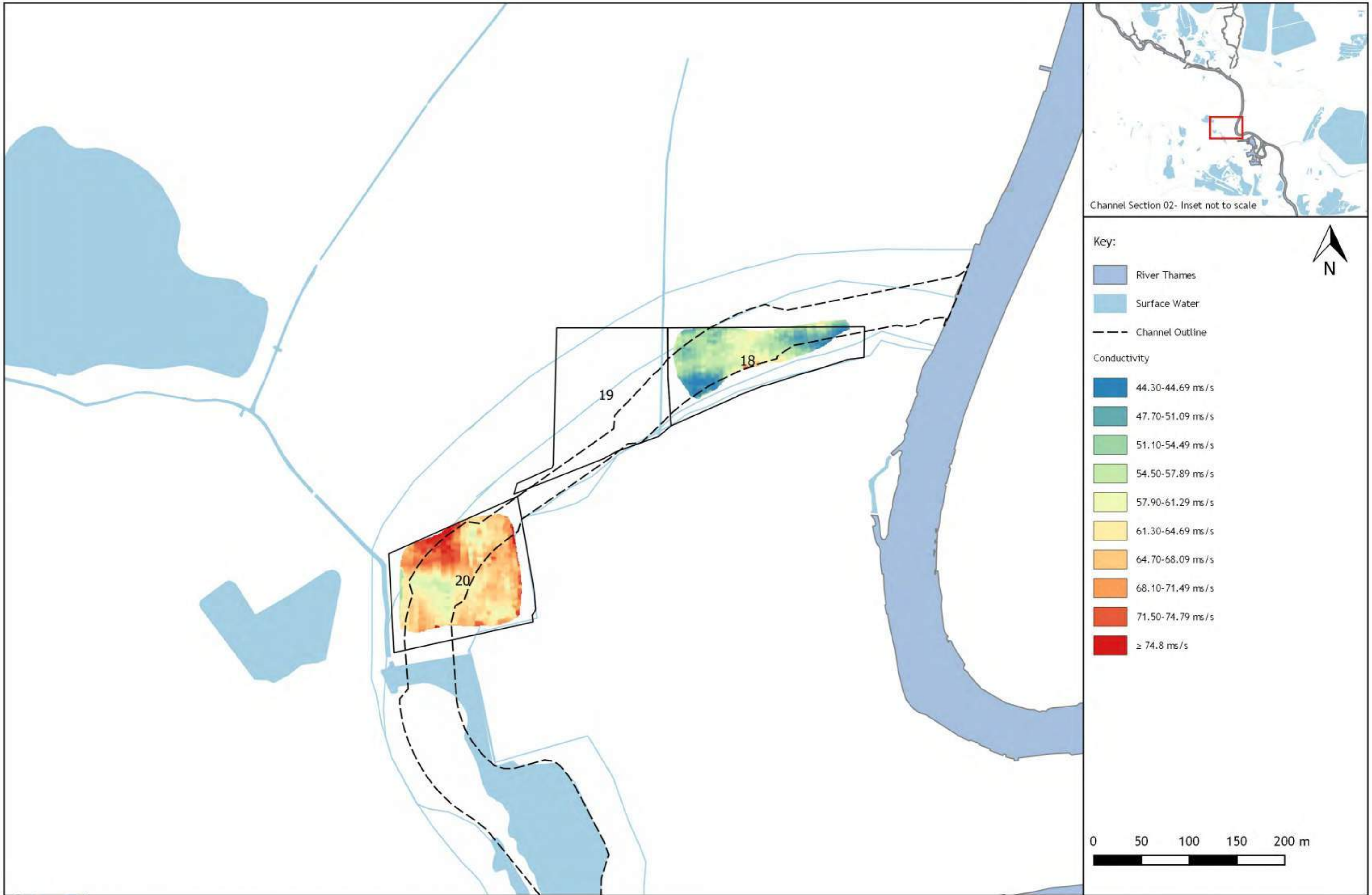

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Figure 7.4 EM Results from Thorpe Hay Meadow, Egham Hythe.
Scale at A4: 1:5000

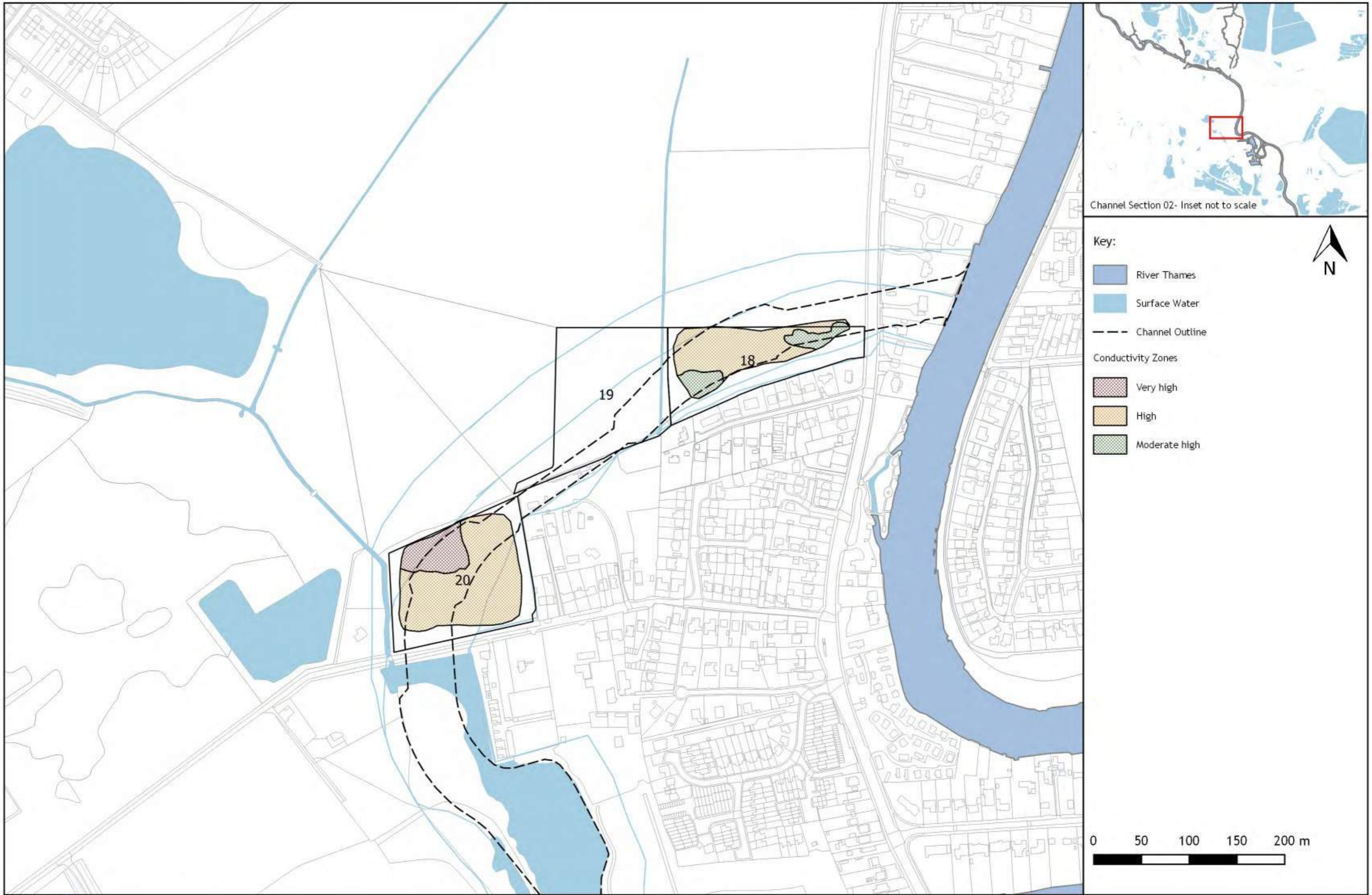

Figure 7.5 EM Conductivity Zones at Thorpe Hay Meadow, Egham Hythe.
Scale at A4: 1:5000

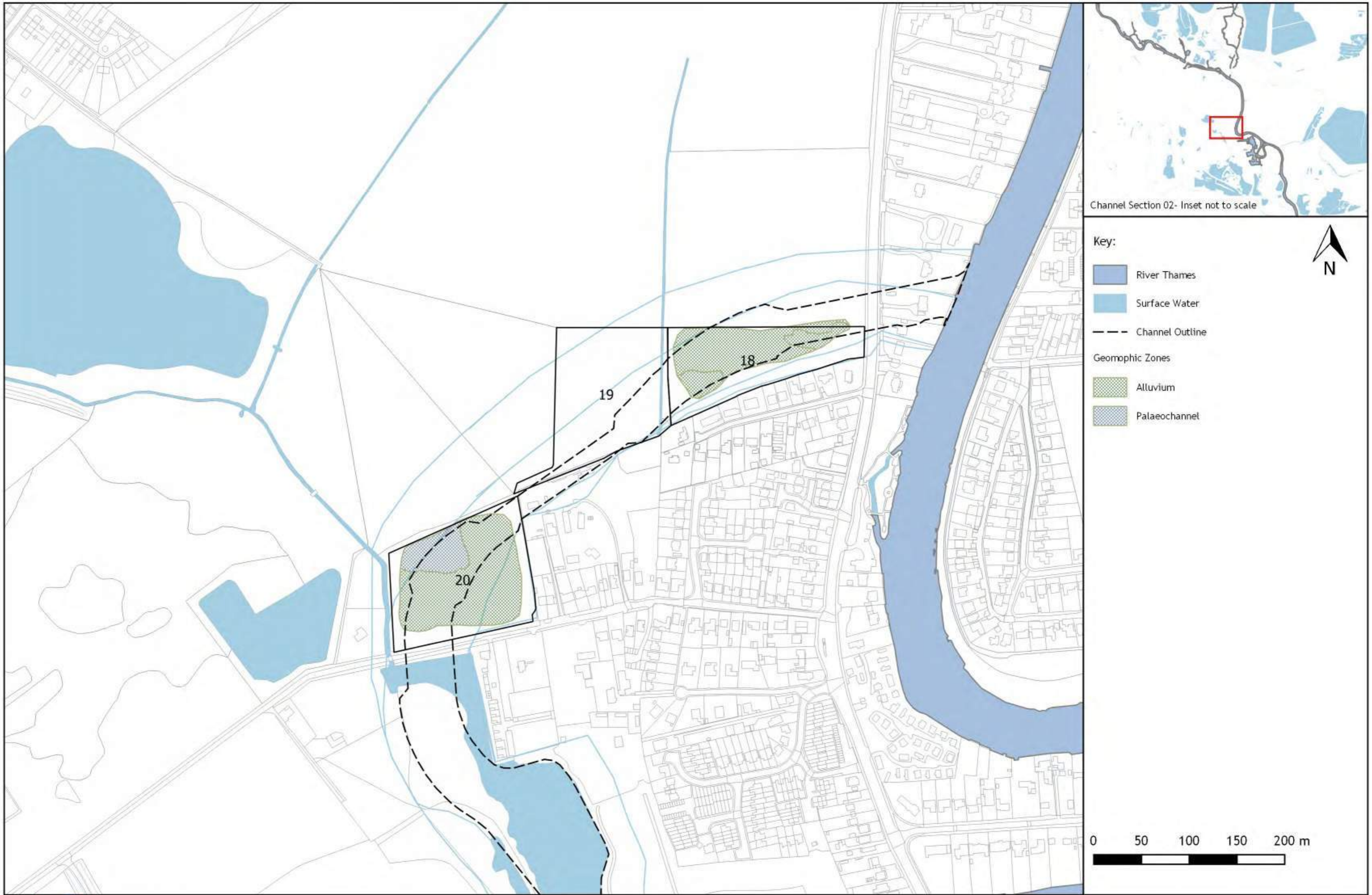

Figure 7.6 Geomorpology from EM survery at Thorpe Hay Meadow, Egham Hythe.
Scale at A4: 1:5000

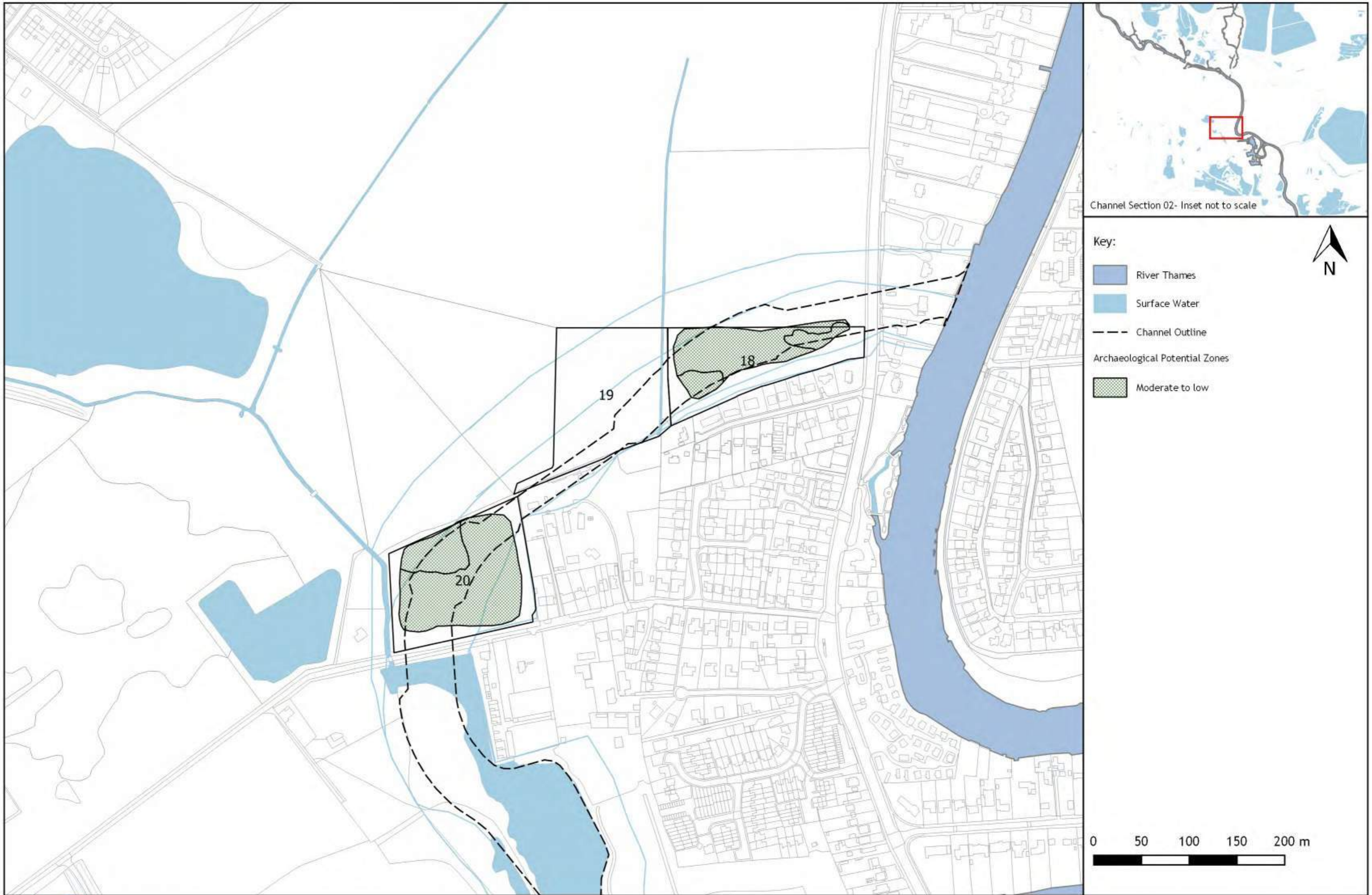

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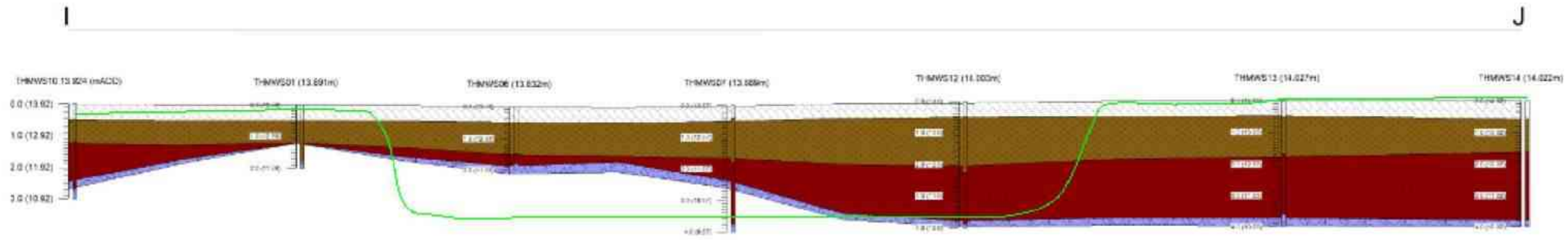
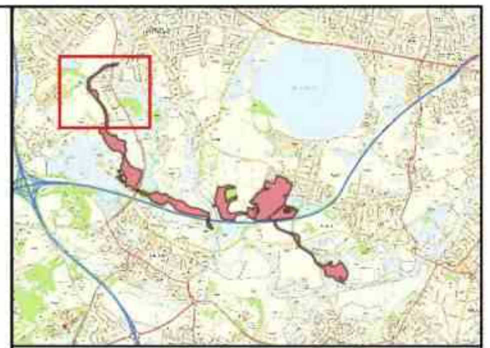
Figure 7.7 Archaeological Potential at Thorpe Hay Meadow, Egham Hythe.
Scale at A4: 1:5000



Not to Scale



Key:

- Concept Design Channel Corridor
- Development Working Areas
- Possible Areas of Habitat Creation
- River Thames
- Surface Water
- Cross Section
- Indicative Bed Level (mAOD)
- Stage 1 - boreholes

Stratigraphy:

- Made Ground
- Alluvium (Minerogenic)
- Alluvium (Organic)
- Shepperton Gravel Member

Inset scale at A3- 1: 5000

N

Indicative bed levels provided by client.

0 50 100 150 200 m

Scale at A3- 1: 5000

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Figure 7.8 Transect Section I-J of RTS stage 1 boreholes Indicative Bed Level Depths- Channel Section 2 (Thorpe Hay Medow)
Scale at A3: varies

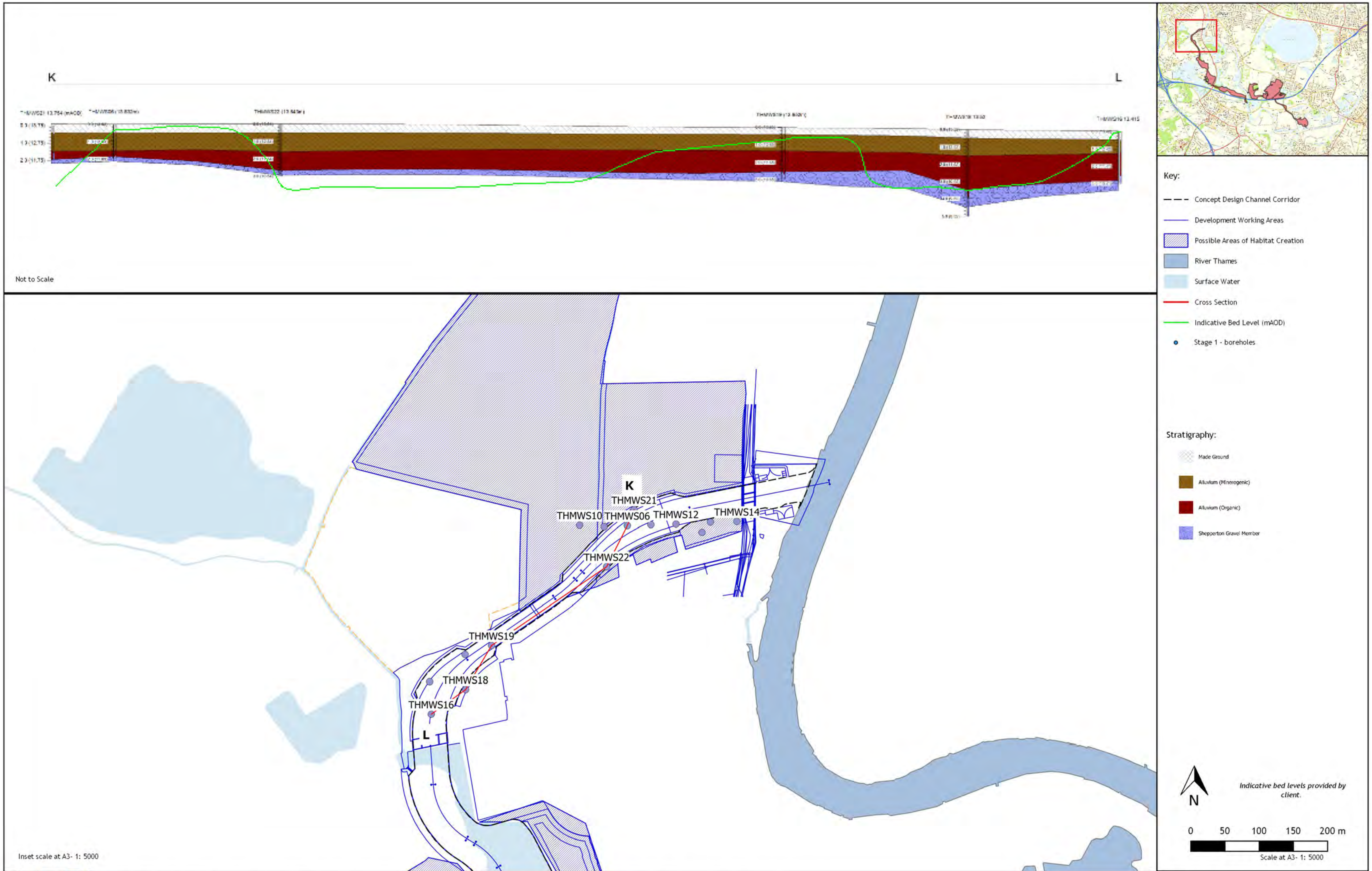

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Figure 7.9 - Transect Section K-L of RTS stage 1 boreholes Indicative Bed Level Depths- Channel Section 2 (Thorpe Hay Meadow)
Scale at A3: varies

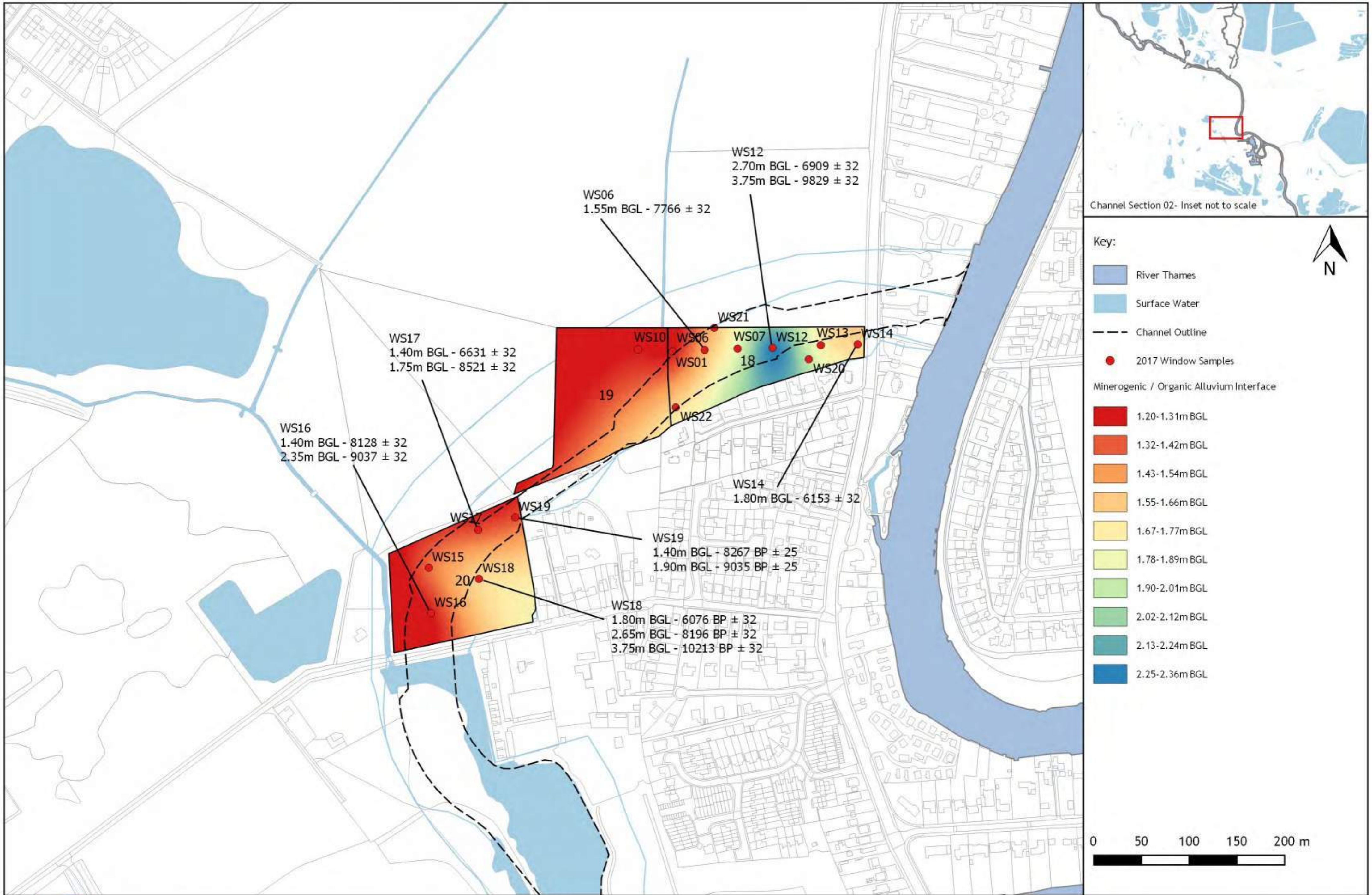

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Figure 7.10 Depths of Minerogenic and Organic Alluvium Interface at Thorpe Hay Meadow, Egham Hythe.
Scale at A4: 1:5000

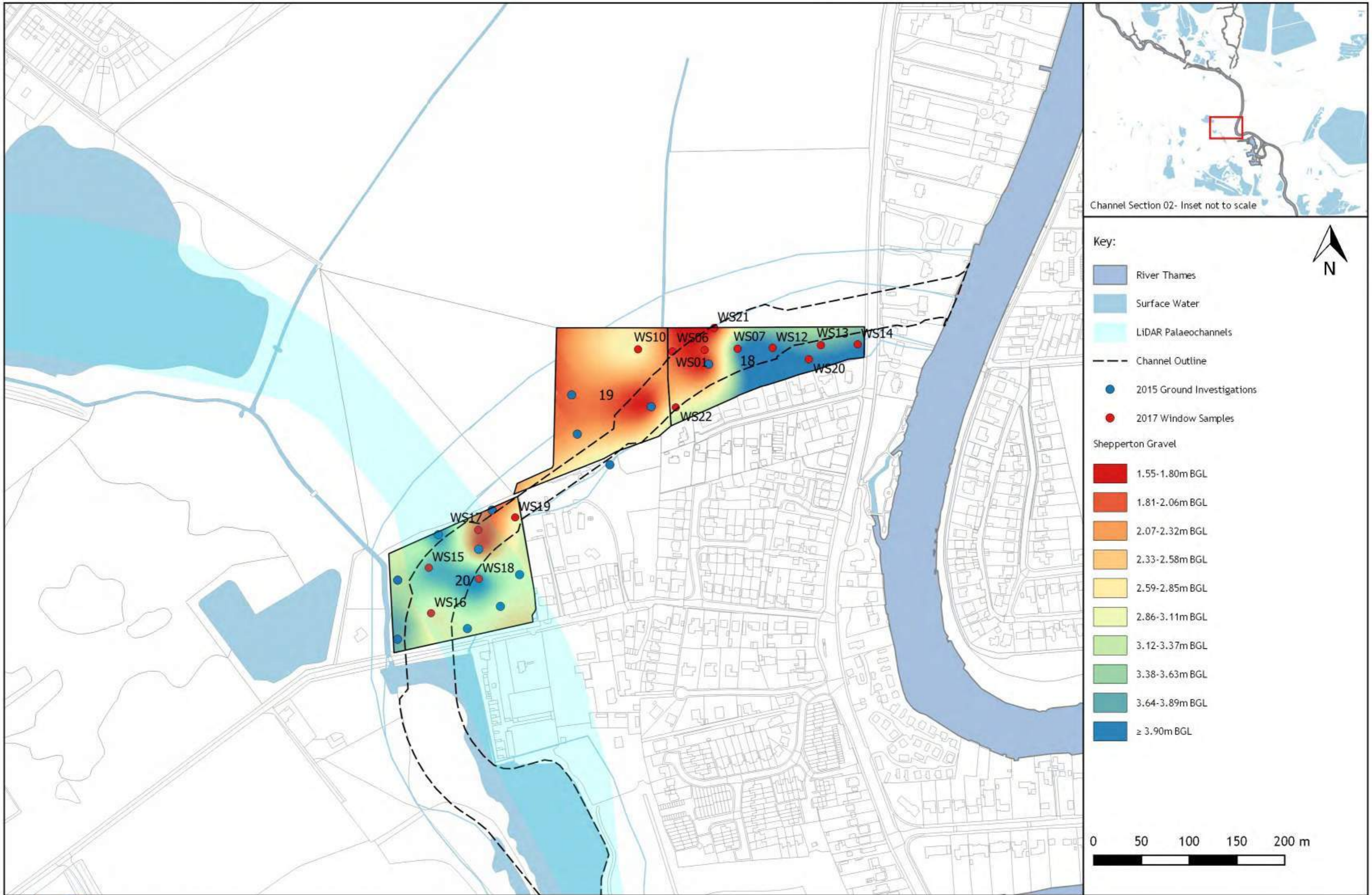

Figure 7.11 Depth of Shepperton Gravel at Thorpe Hay Meadow, Egham Hythe.
Scale at A4: 1:5000

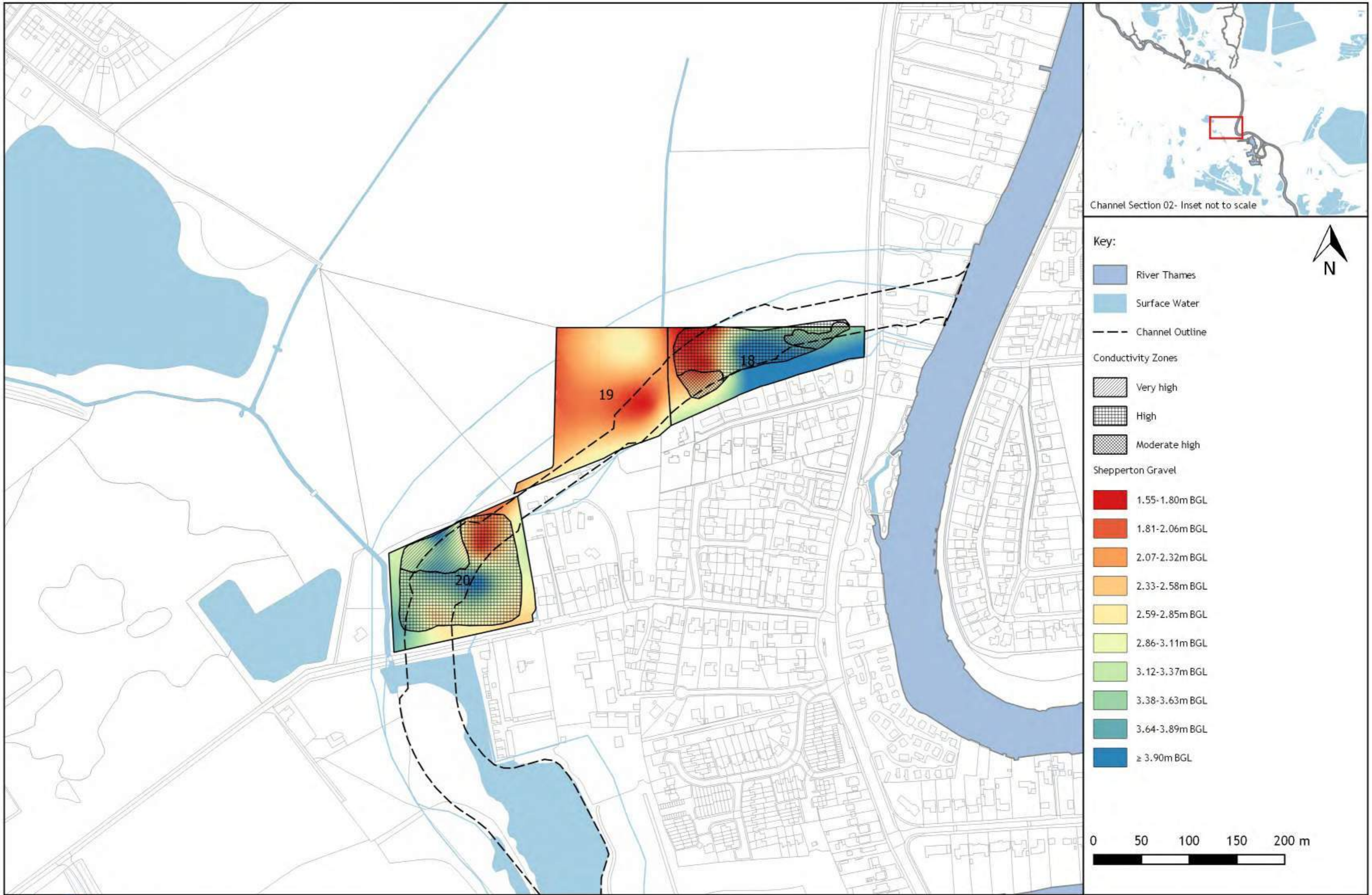

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Figure 7.12 Depth of Shepperton Gravel and Conductivity Zones from EM at Thorpe Hay Meadow, Egham Hythe.
Scale at A4: 1:5000

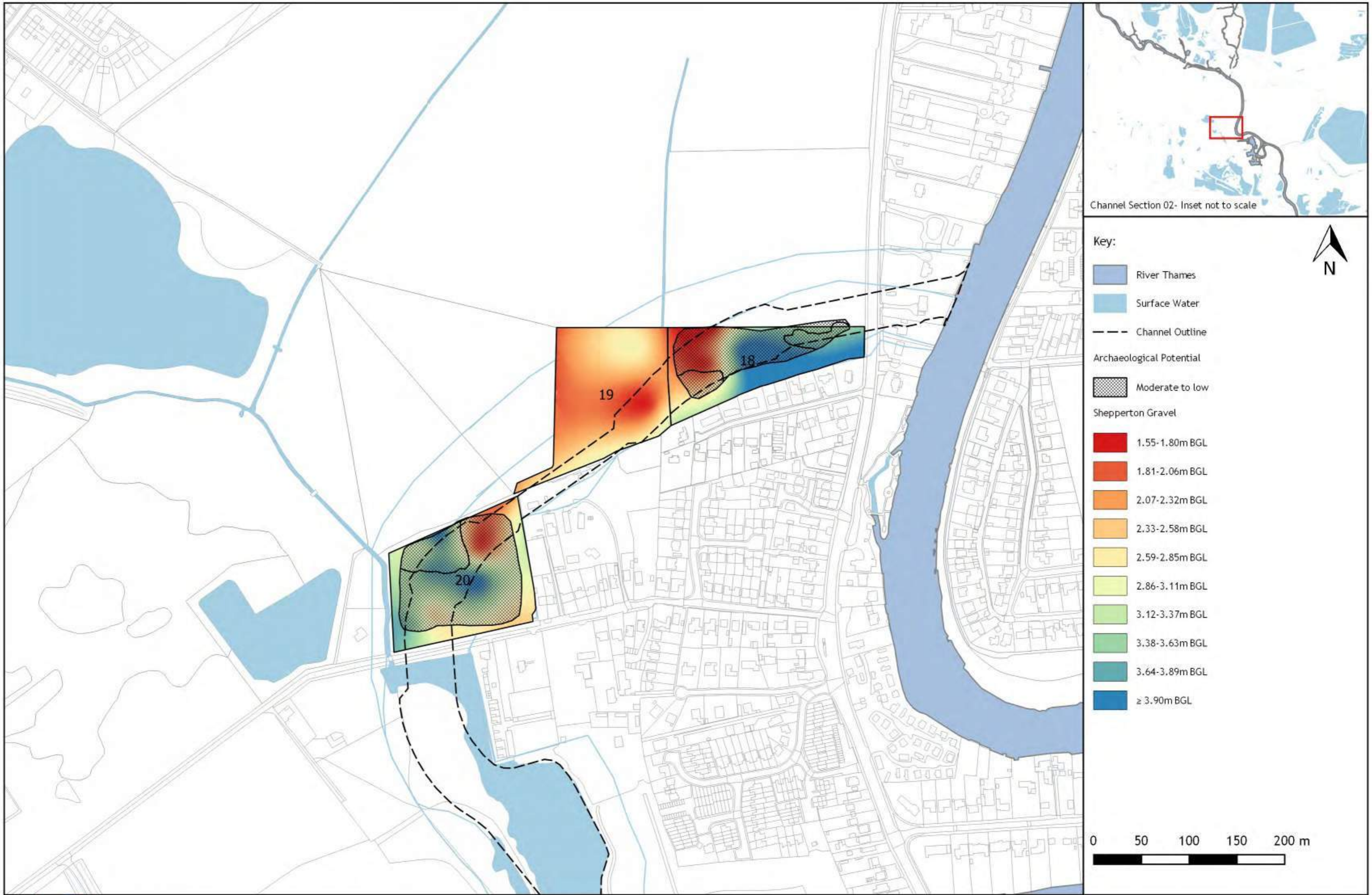

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Figure 7.13 Depth of Shepperton Gravel and Archaeological Potential from EM at Thorpe Hay Meadow, Egham Hythe.
Scale at A4: 1:5000

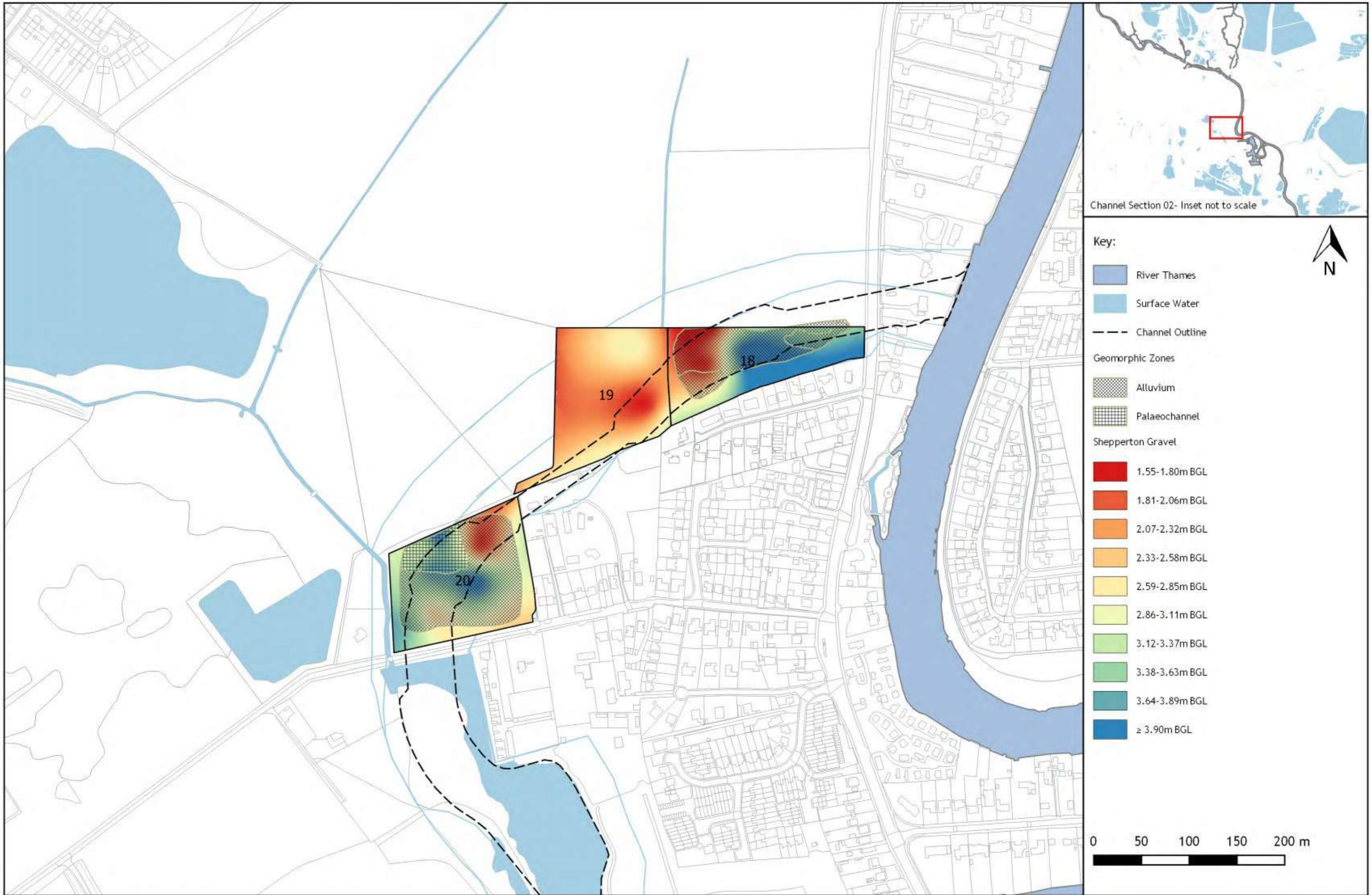

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Figure 7.14 Depth of Shepperton Gravel and Geomophic Zones from EM at Thorpe Hay Meadow, Egham Hythe.
Scale at A4: 1:5000

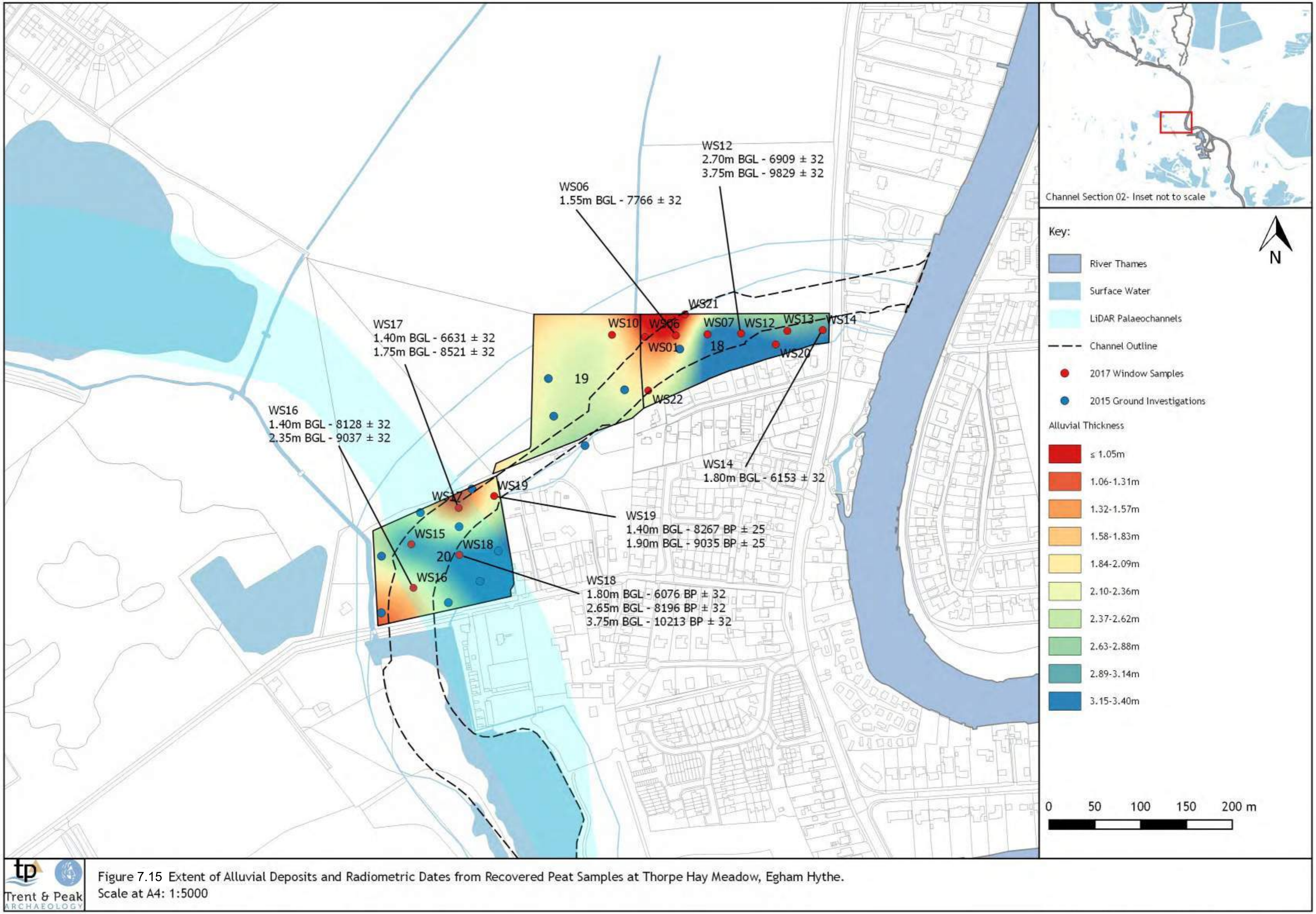

Figure 7.15 Extent of Alluvial Deposits and Radiometric Dates from Recovered Peat Samples at Thorpe Hay Meadow, Egham Hythe.
Scale at A4: 1:5000

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Figure 8.1 Geophysics Results at Chertsey Abbey Meads Fields 23-26 (Channel Section 2)
Scale at A4: 1:4000

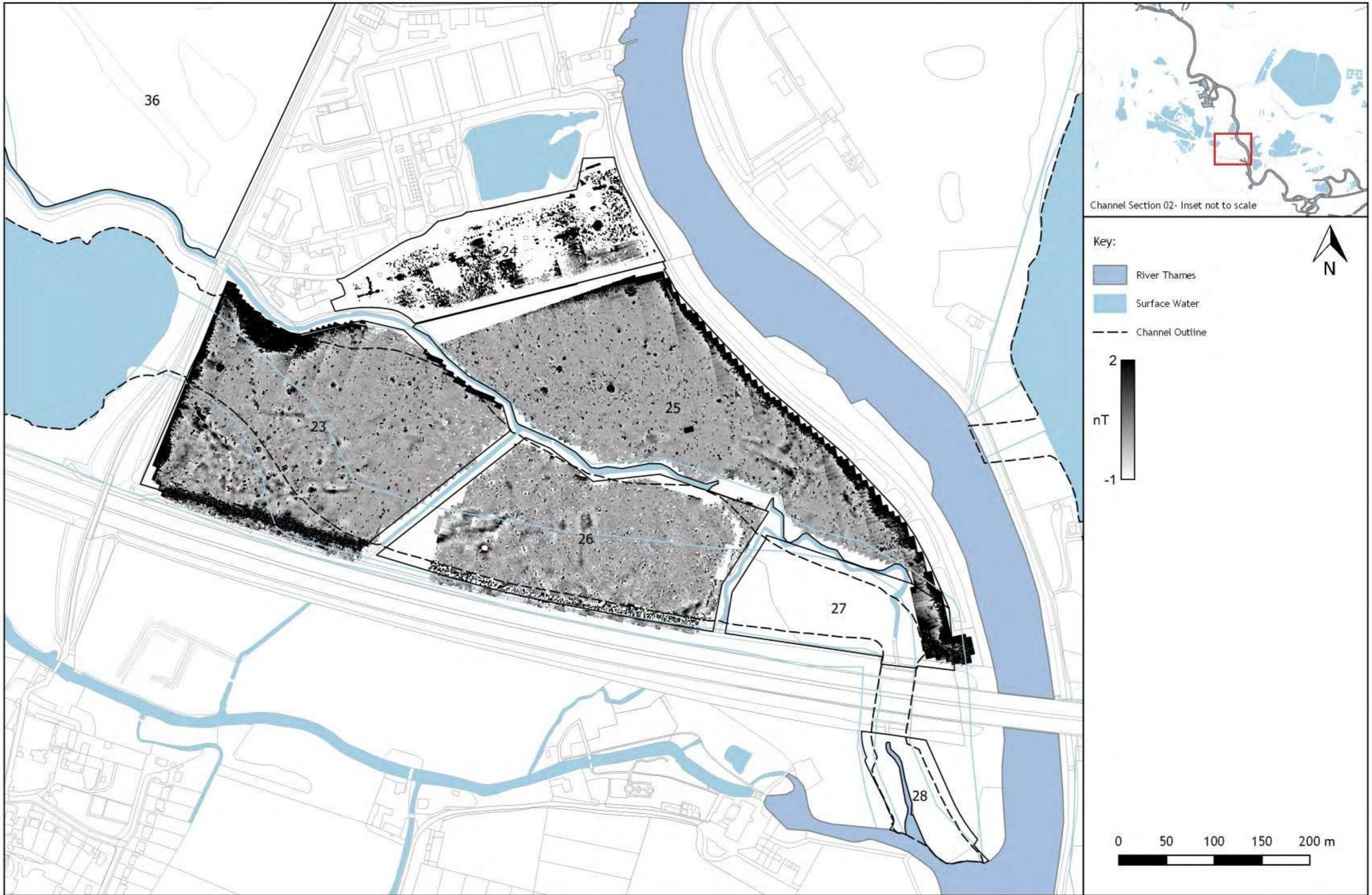

Figure 8.2 Gradiometer Survey Results from Chertsey Abbey Meads.
Scale at A4: 1:5000

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Figure 8.3 Interpreted Gradiometer Survey Results from Chertsey Abbey Meads.
Scale at A4: 1:5000

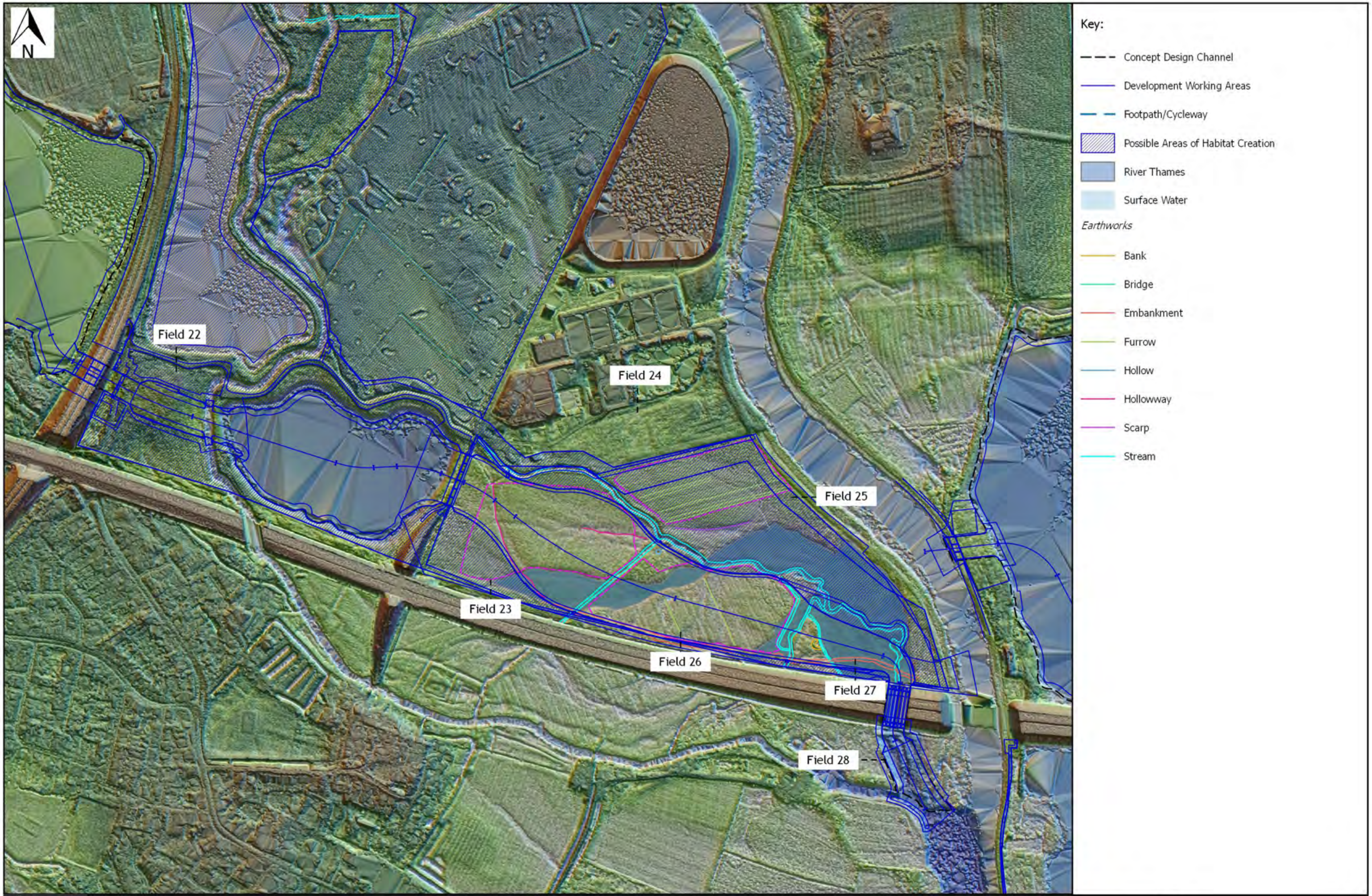

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Figure 8.4 Earthworks Survey at Chertsey Abbey Meads (Channel Section 2)
Scale at A4: 1:8000

0 100 200 m

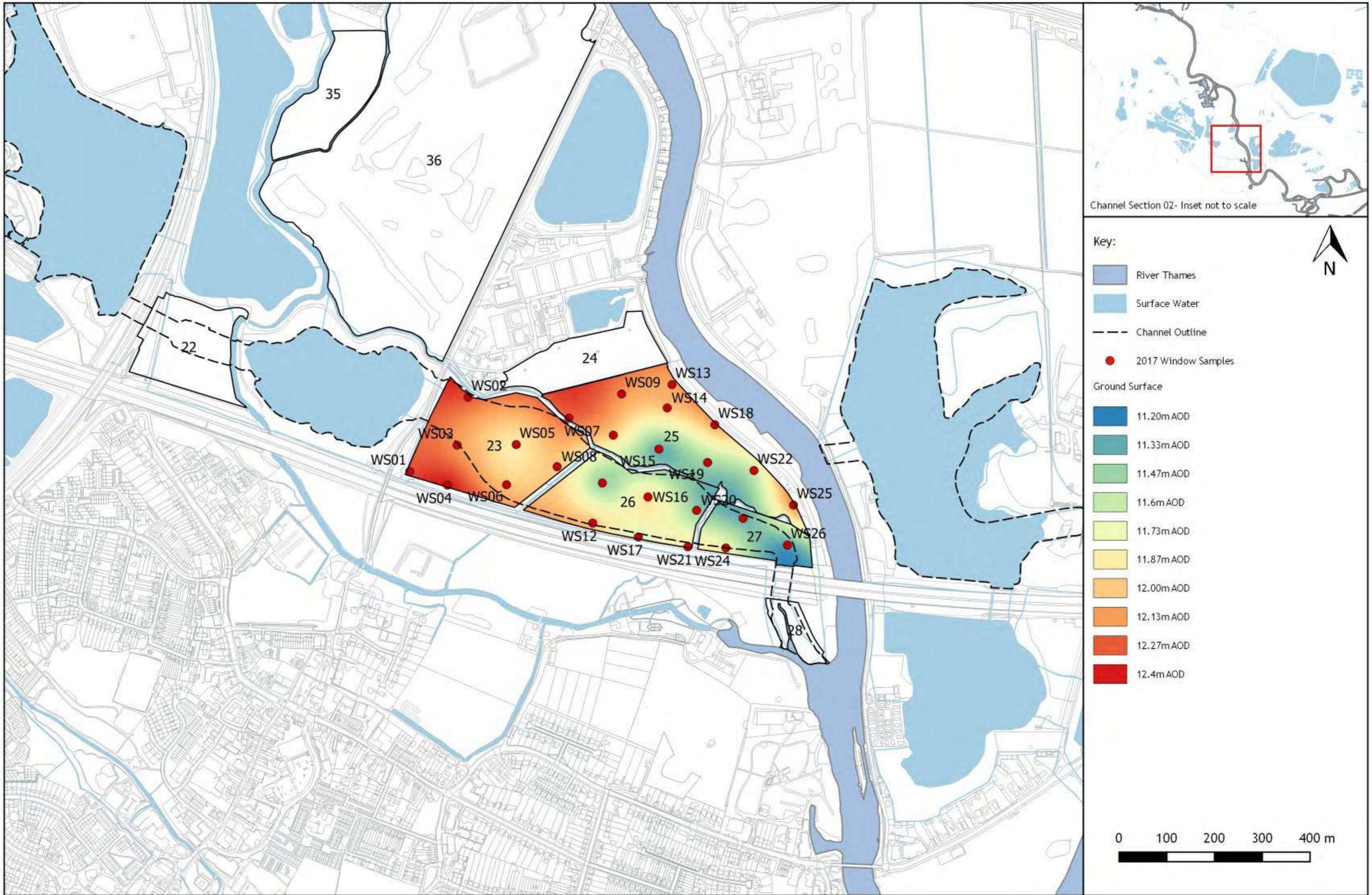

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Figure 8.5 Ground Surface Level and Borehole Locations at Chertsey Abbey Meads
Scale at A4: 1:10000

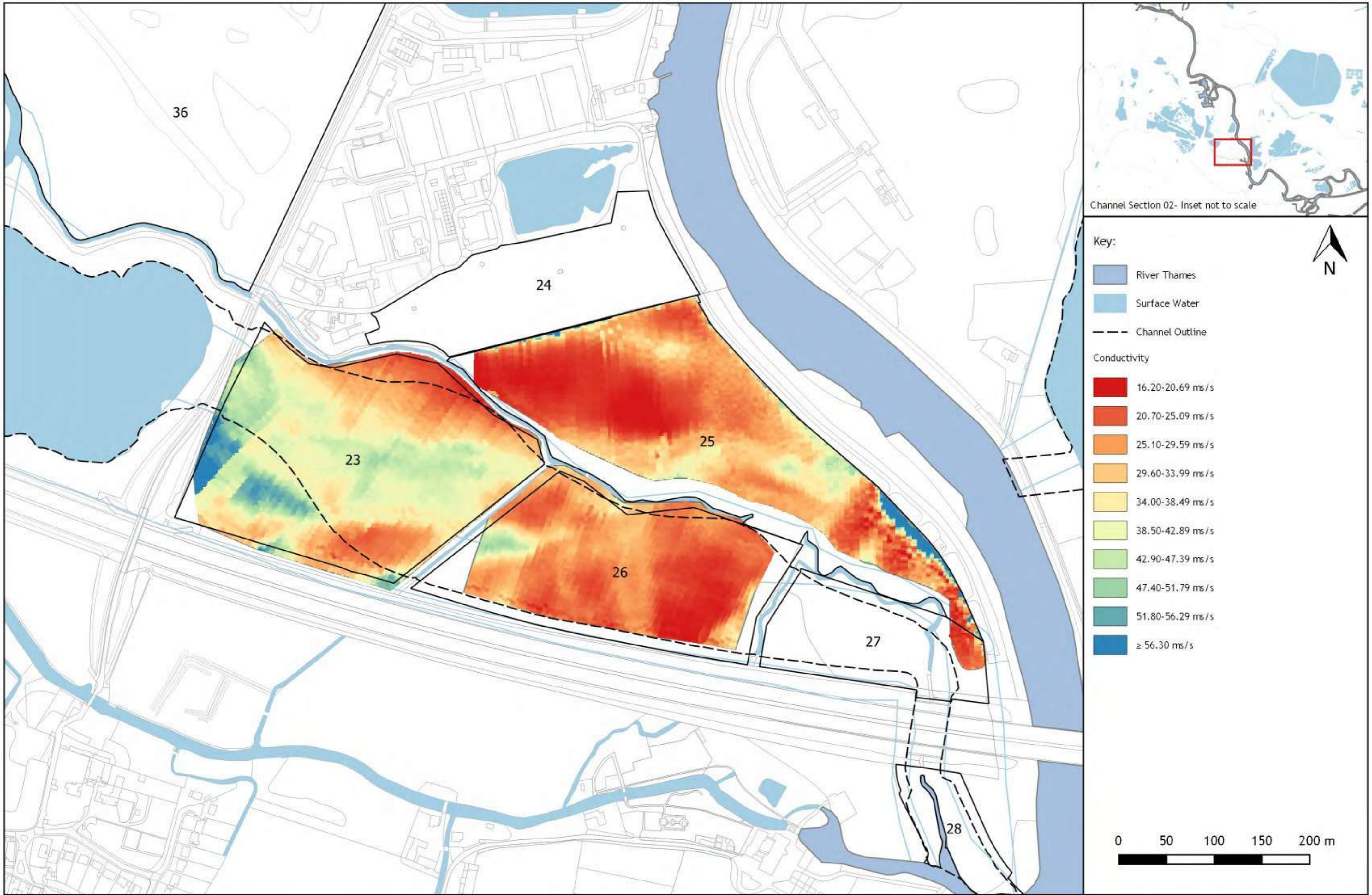

Figure 8.6 EM Survey Results from Chertsey Abbey Meads.
Scale at A4: 1:5000

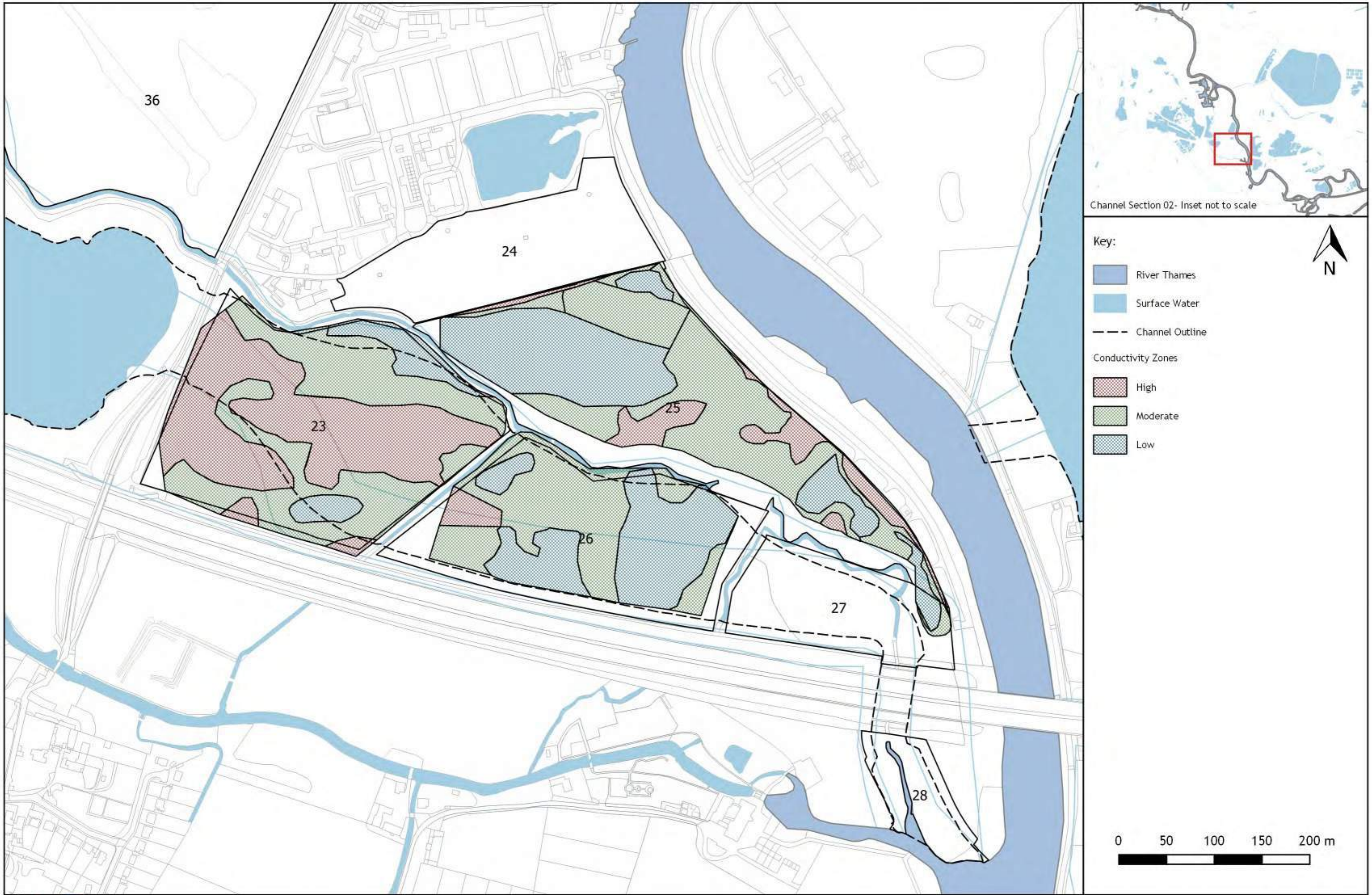

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Figure 8.7 Conductivity Zones from EM Survey Resulst at Chertsey Abbey Meads.
Scale at A4: 1:5000

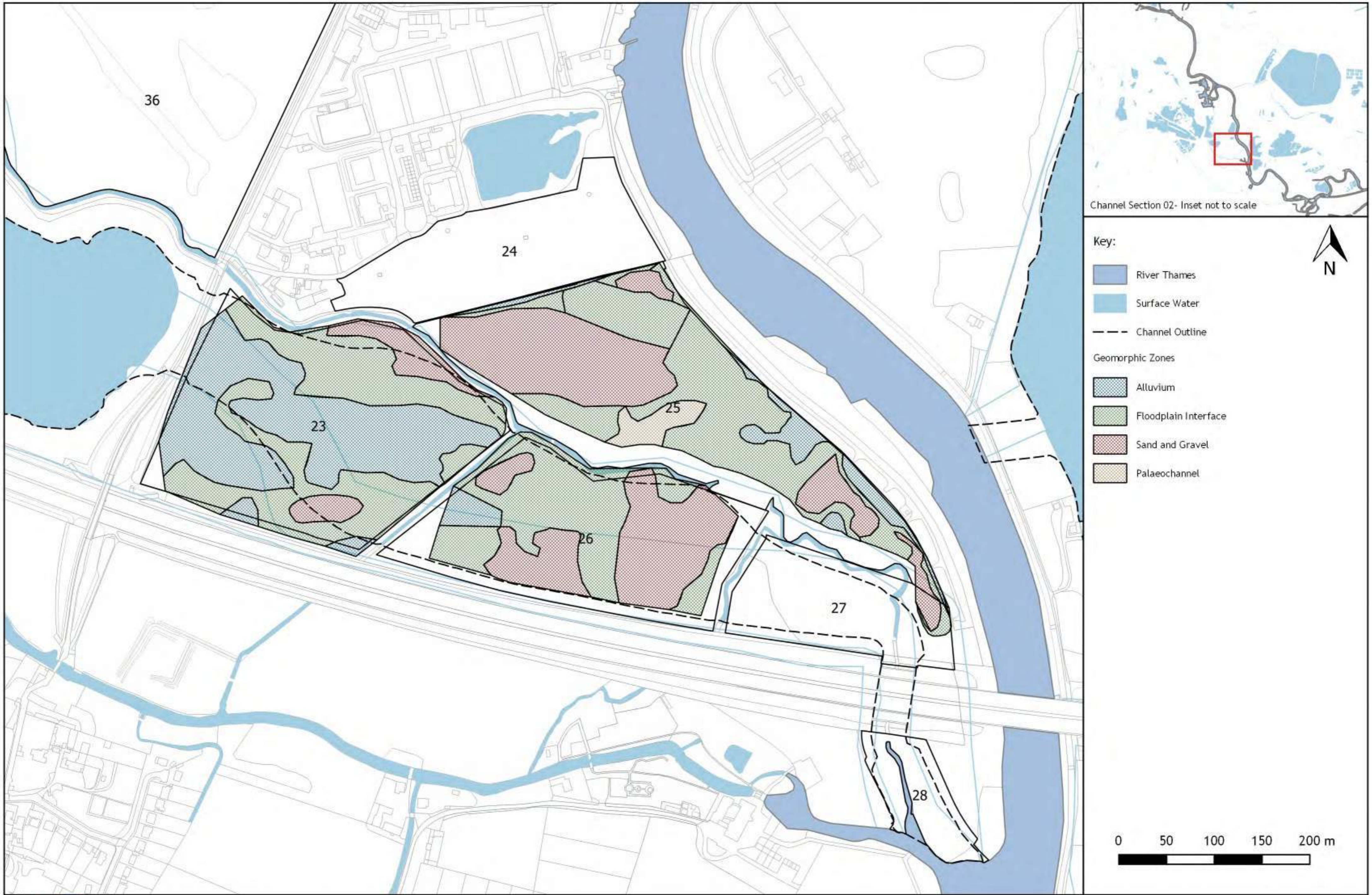

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Figure 8.8 Geomorphic Zones from EM Survey Results at Chertsey Abbey Meads.
Scale at A4: 1:5000

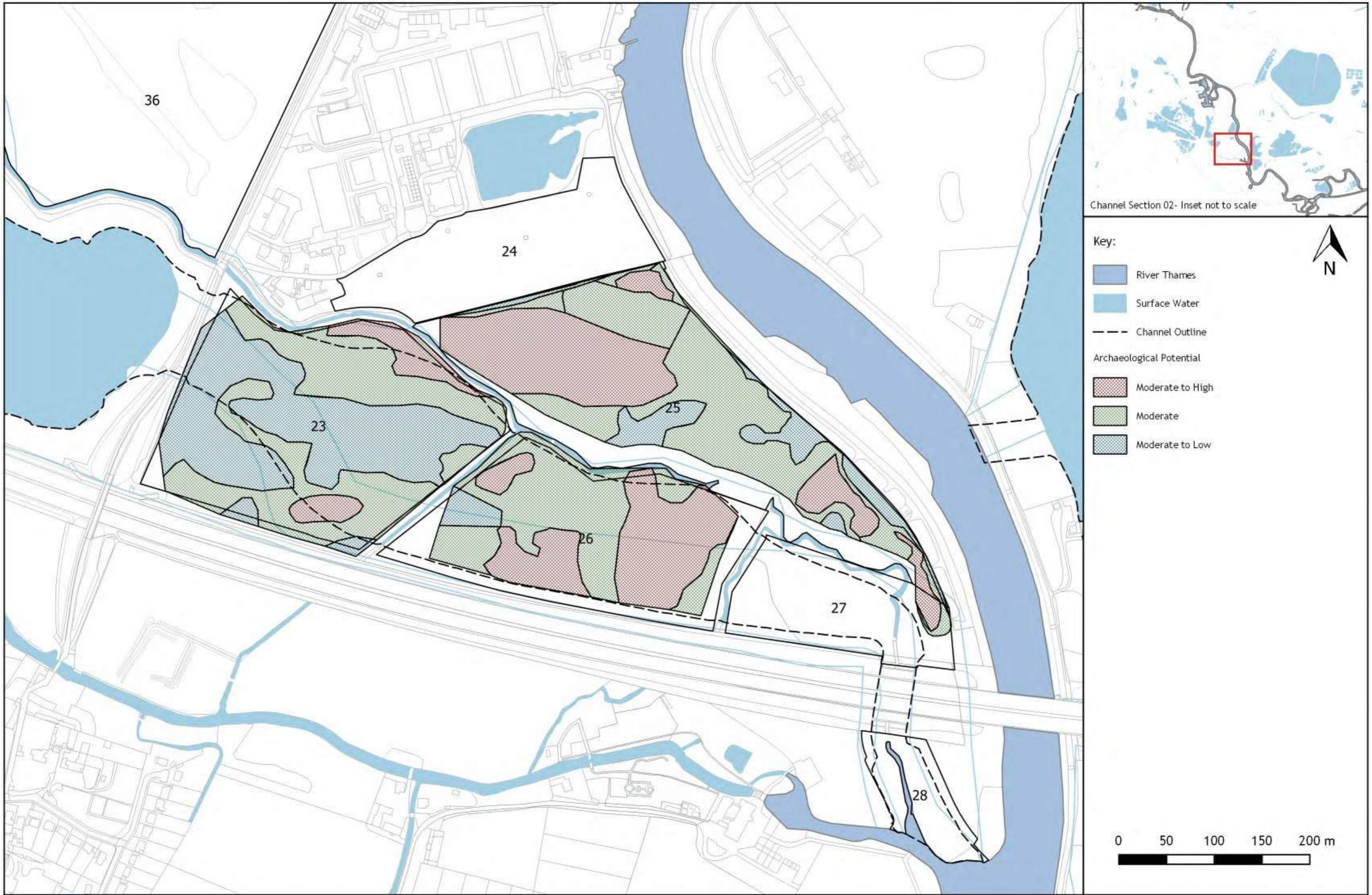

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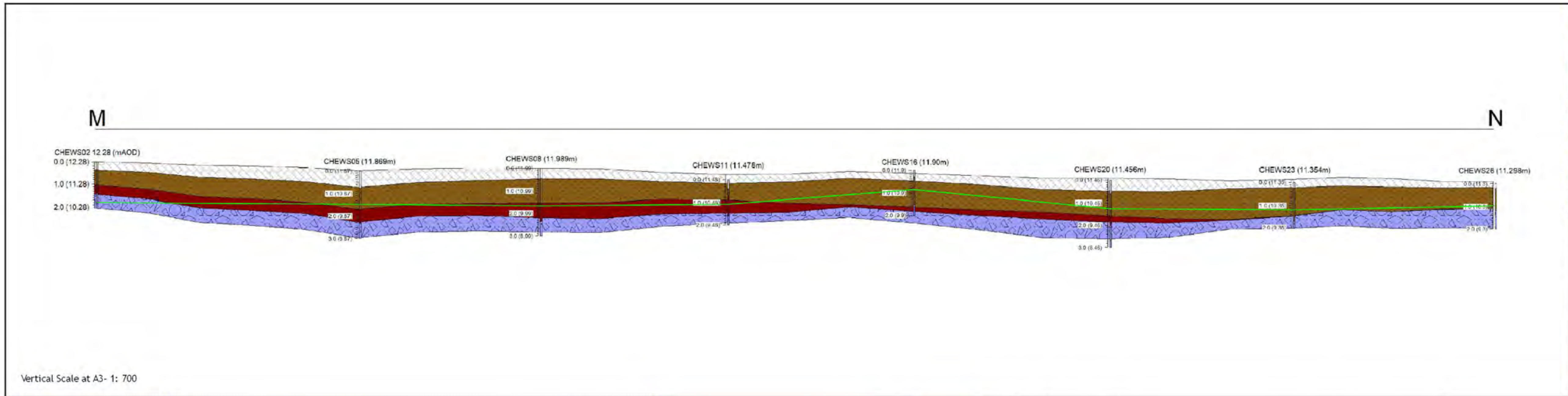
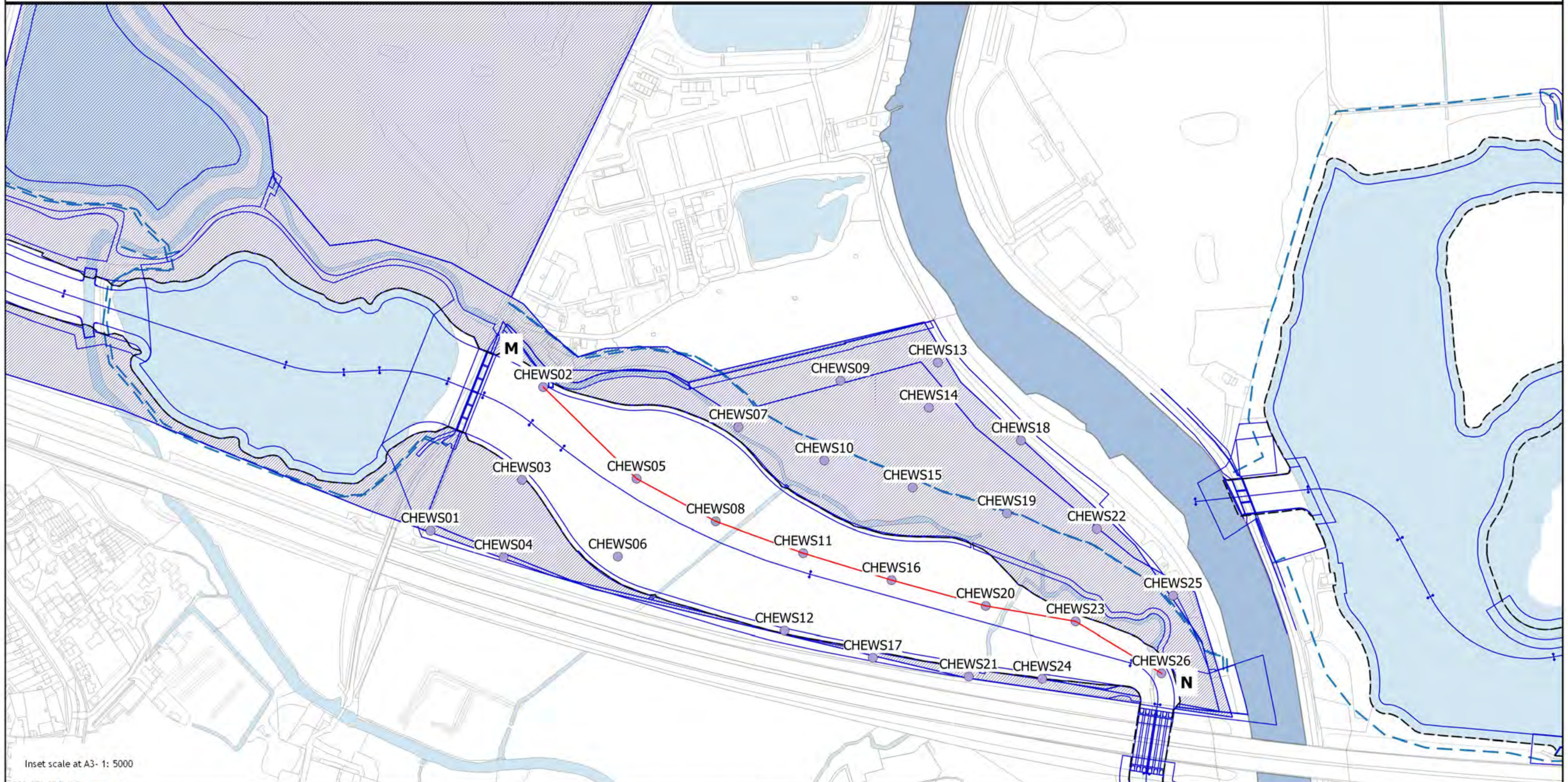
Figure 8.9 Archaeological Potential from EM Survey Results at Chertsey Abbey Meads.
Scale at A4: 1:5000





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- Indicative Bed Level (mAOD)
- Stage 1 - boreholes

Stratigraphy:

- Made Ground
- Alluvium (Minerogenic)
- Alluvium (Organic)
- Shepperton Gravel Member

N

Indicative bed levels provided by client.

0 50 100 150 200 m

Scale at A3- 1: 5000

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Figure 8.10 Transect Section M-N of RTS stage 1 boreholes Indicative Bed Level Depths- Channel Section 2 (Chertsey Abbey Meads)
Scale at A3: varies

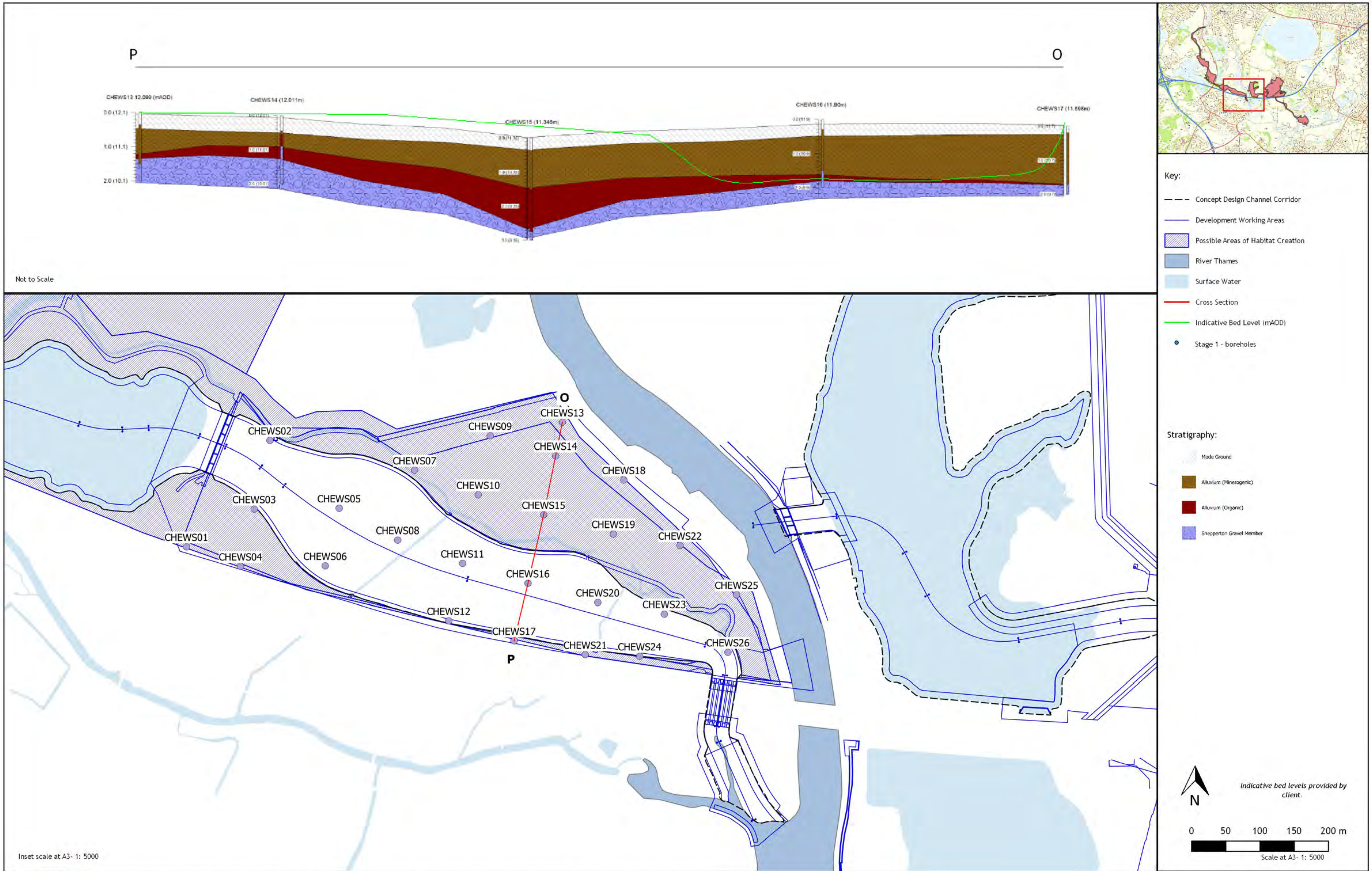

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Figure 8.11 Transect Section O-P of RTS stage 1 boreholes Indicative Bed Level Depths- Channel Section 3 (Chertsey Abbey Meads)
Scale at A3: varies

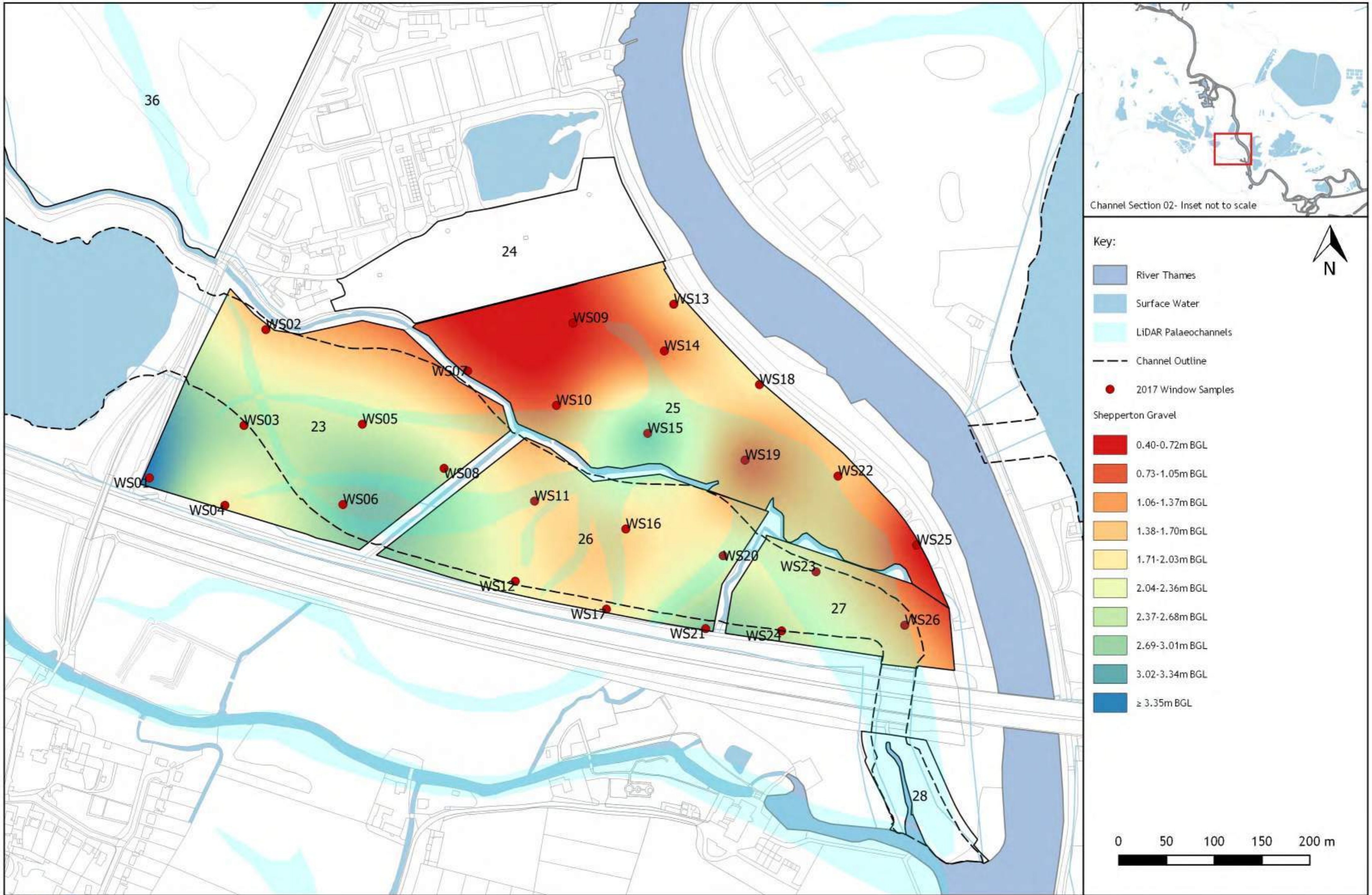

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Figure 8.12 Depths of Shepperton Gravel at Chertsey Abbey Meads.
Scale at A4: 1:5000

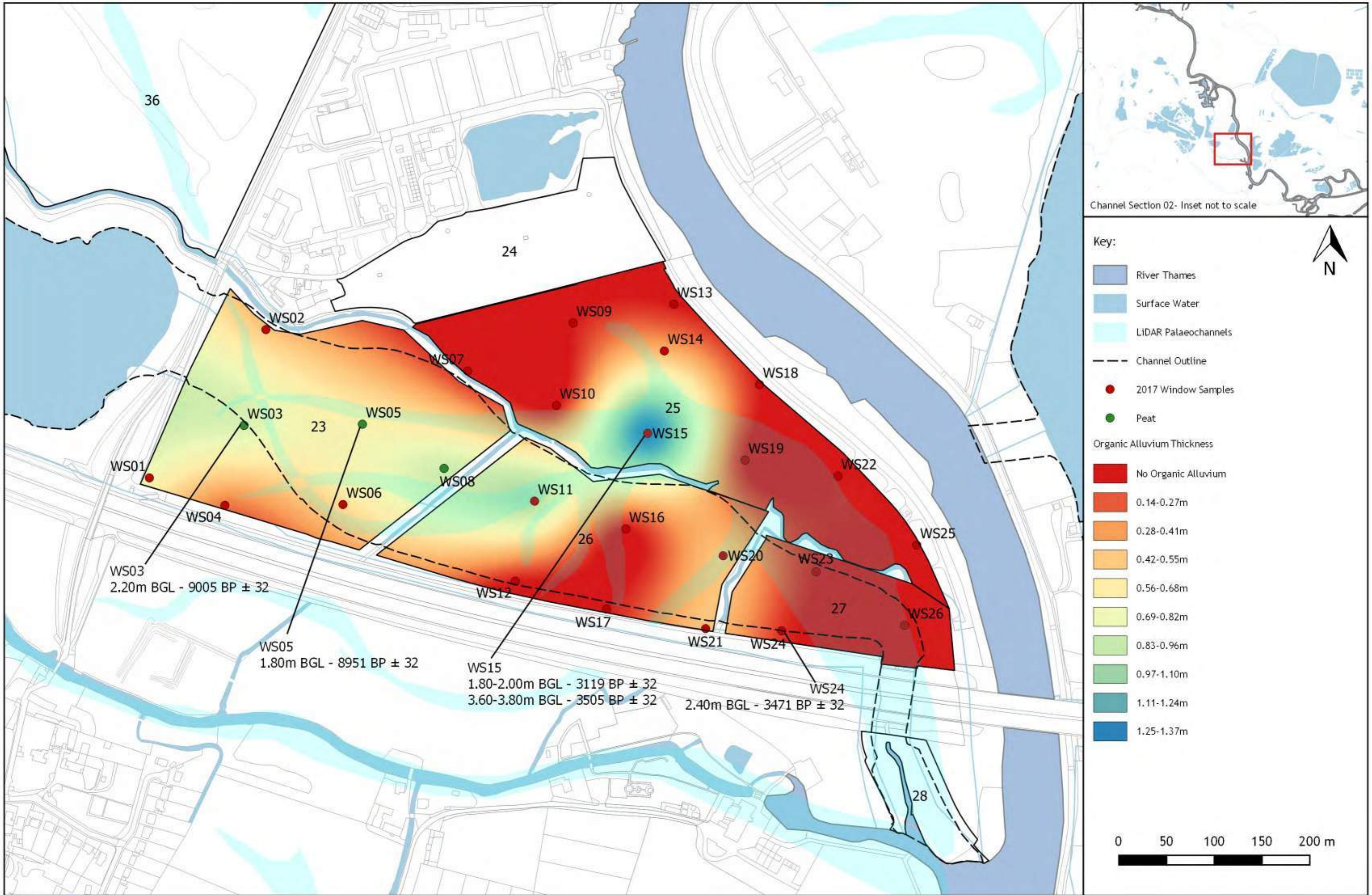

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Figure 8.13 Extent of Organic Alluvial Material at Chertsey Abbey Meads.
Scale at A4: 1:5000

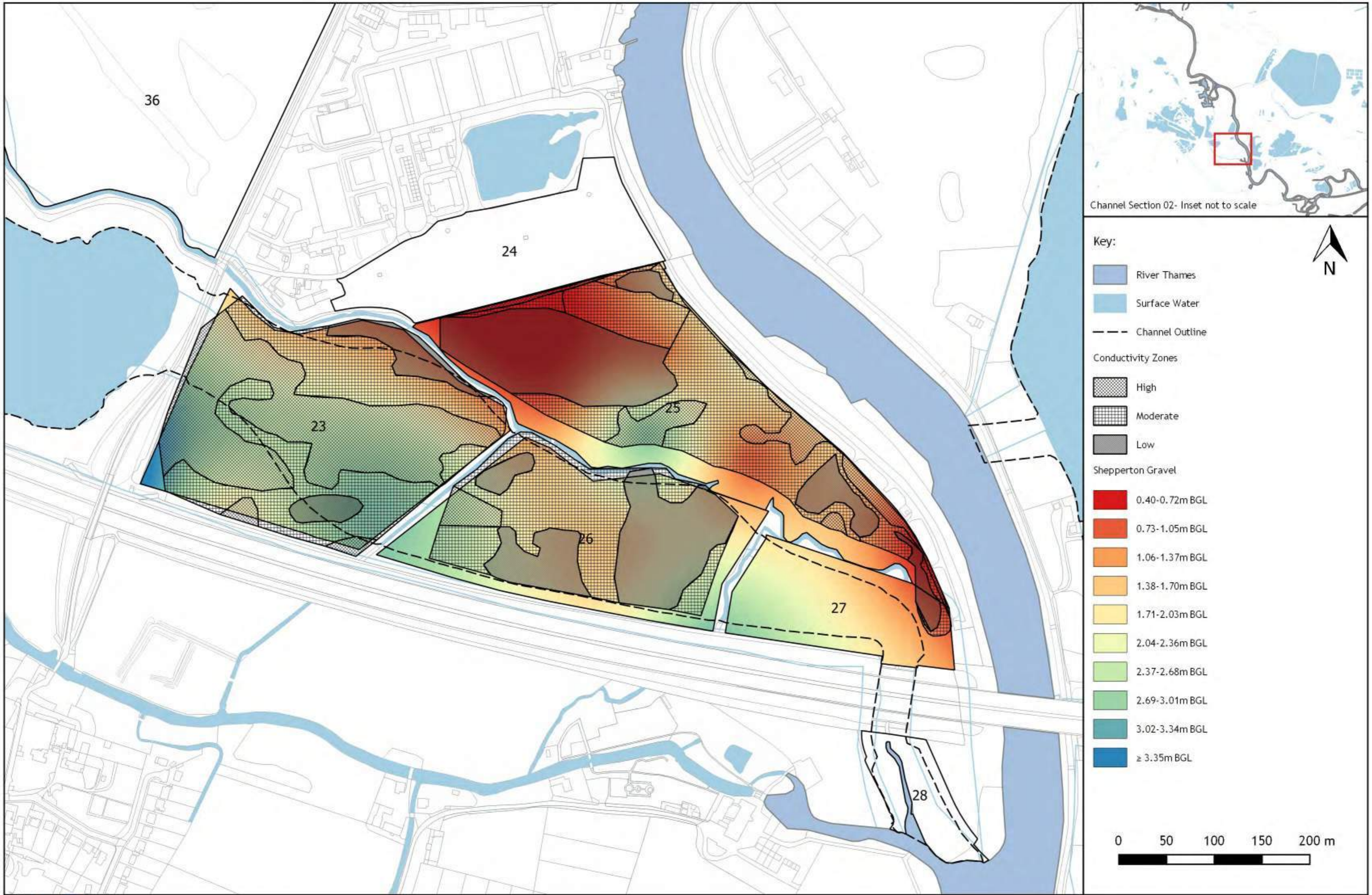

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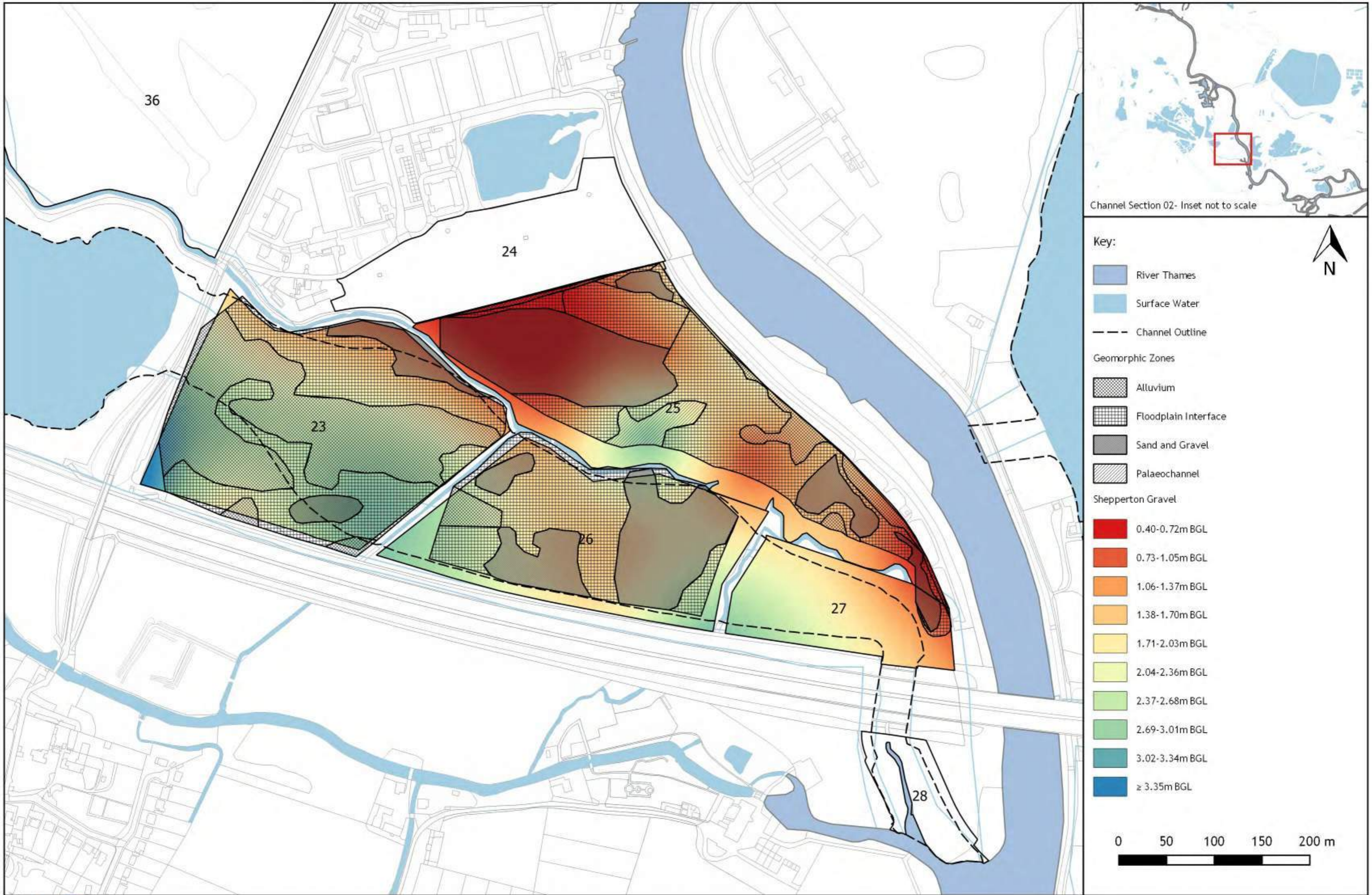
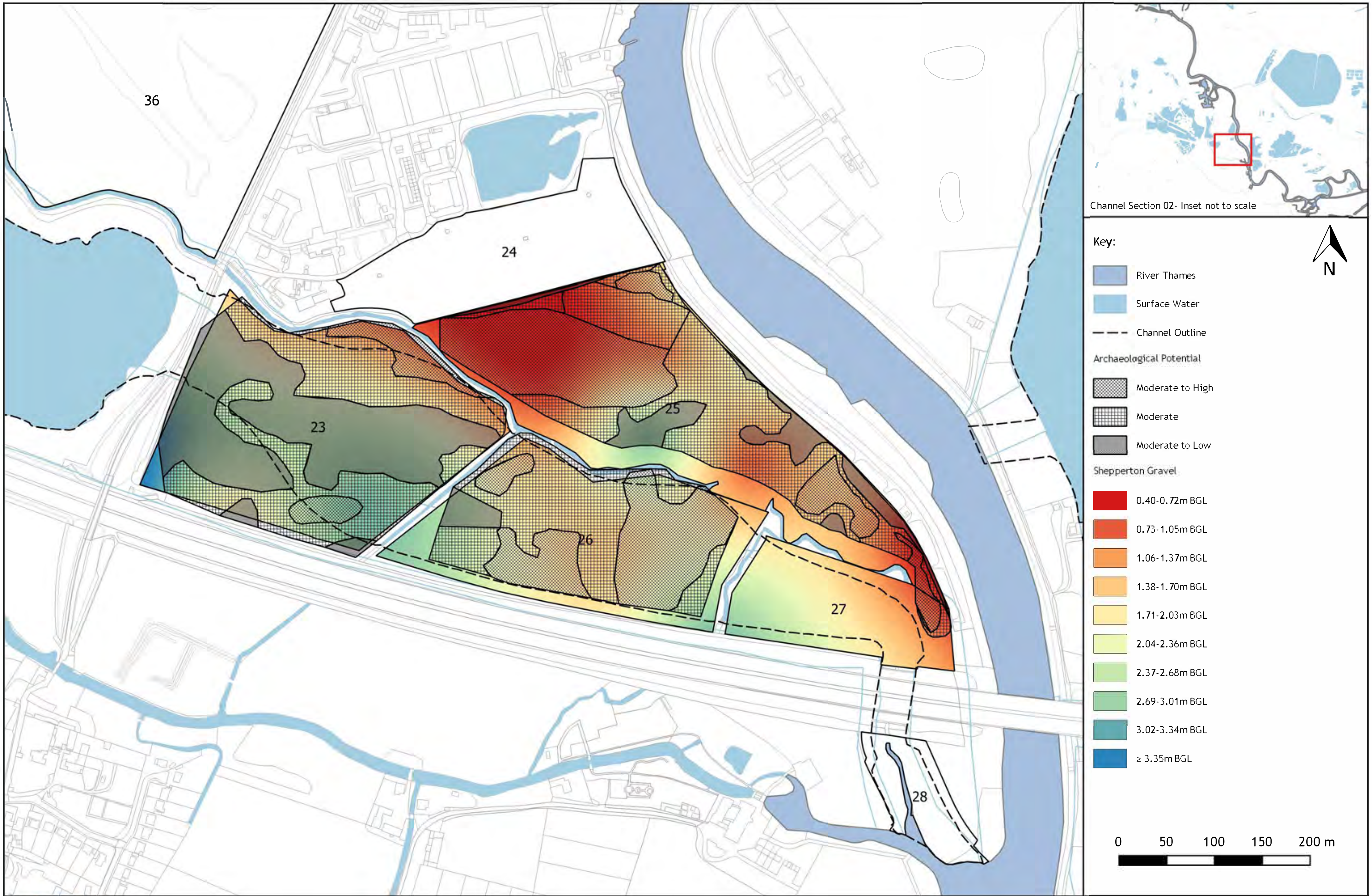
Figure 8.14 Depths of Shepperton Gravel and Conductivity Zones at Chertsey Abbey Meads.
Scale at A4: 1:5000



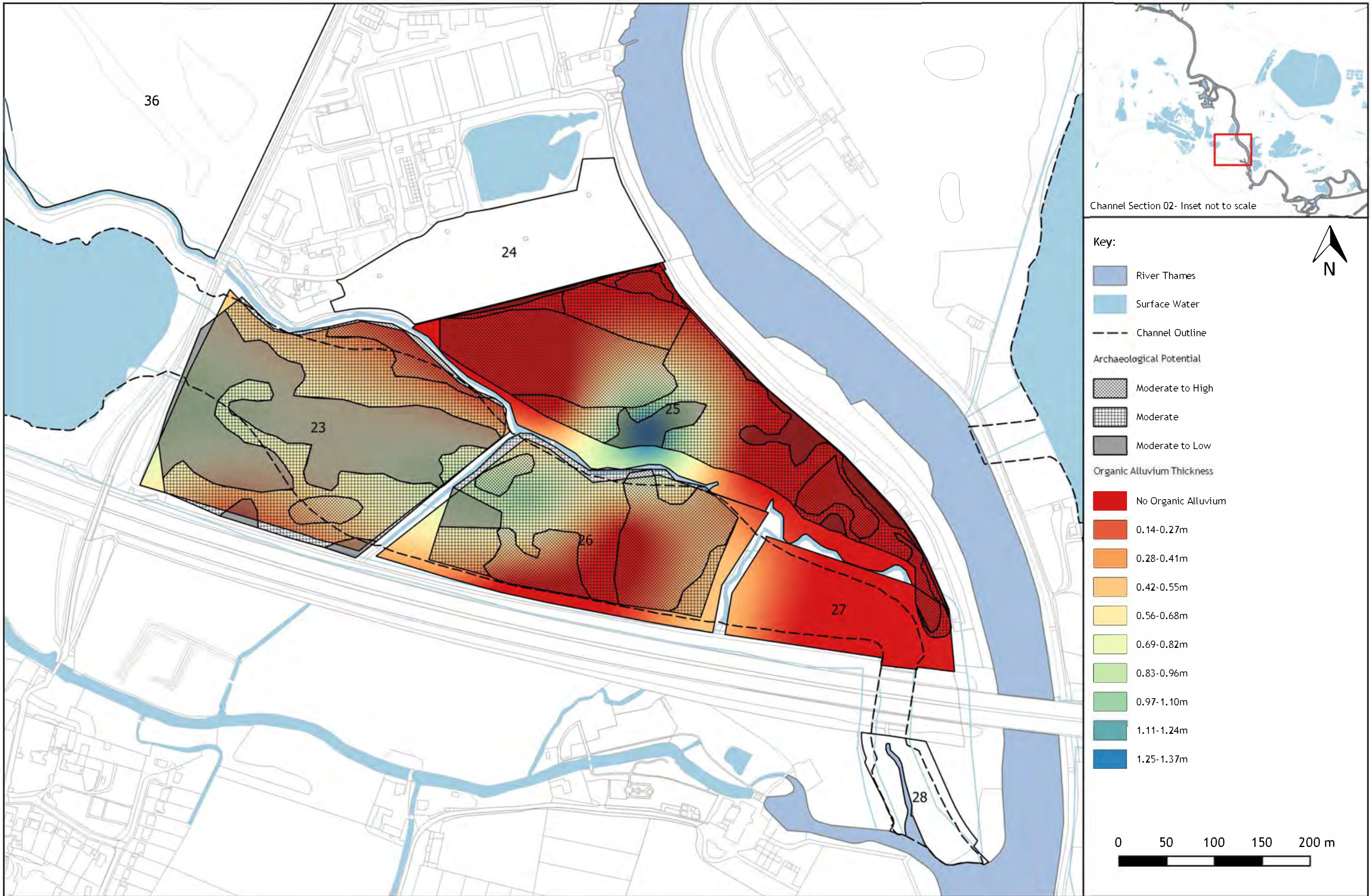
Trent & Peak Archaeology

Figure 8.15 Depths of Shepperton Gravel and Geomorphic Zones at Chertsey Abbey Meads.
Scale at A4: 1:5000



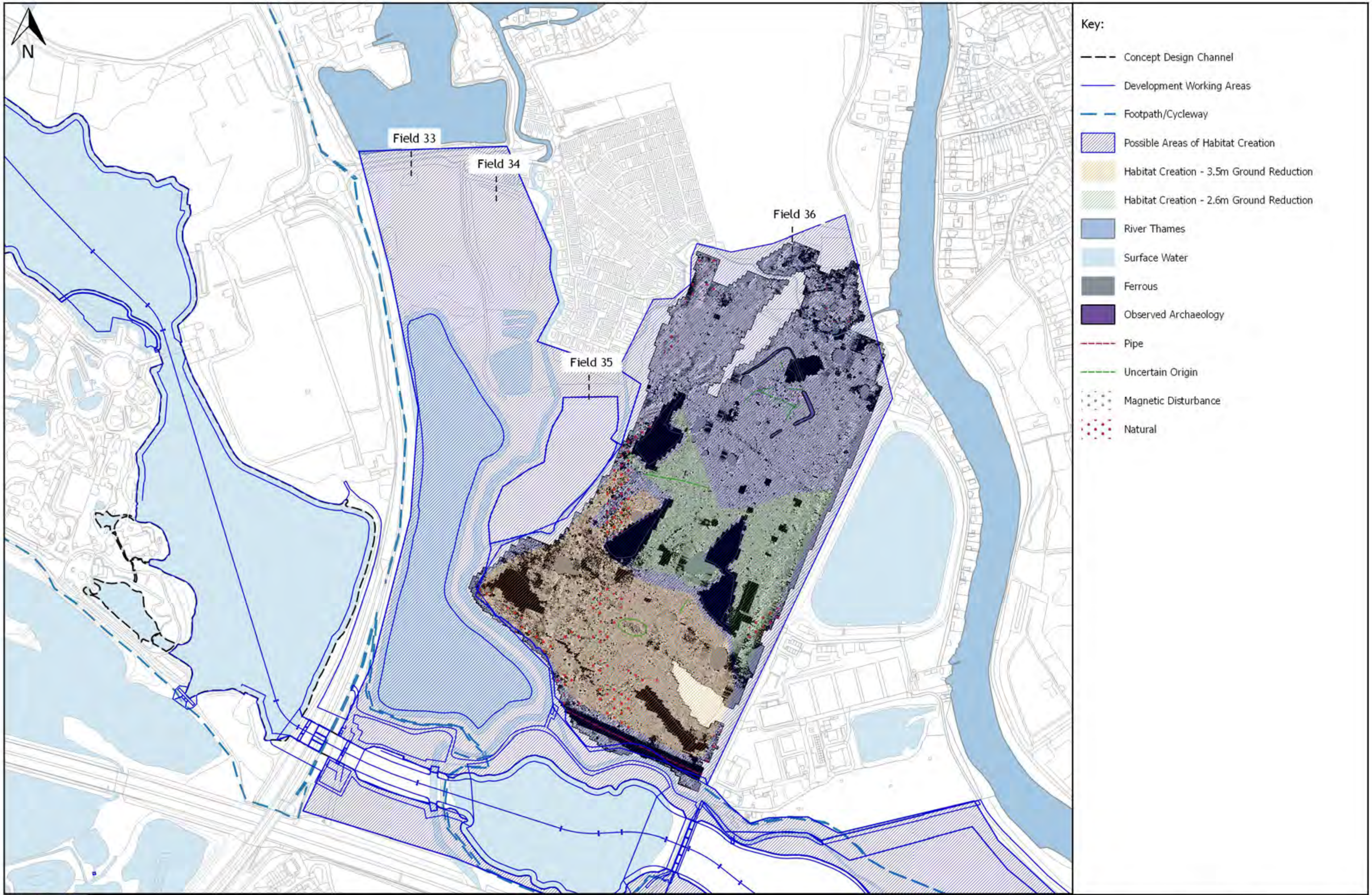
Trent & Peak Archaeology

Figure 8.16 Depths of Shepperton Gravel and Archaeological Potential at Chertsey Abbey Meads.
Scale at A4: 1:5000



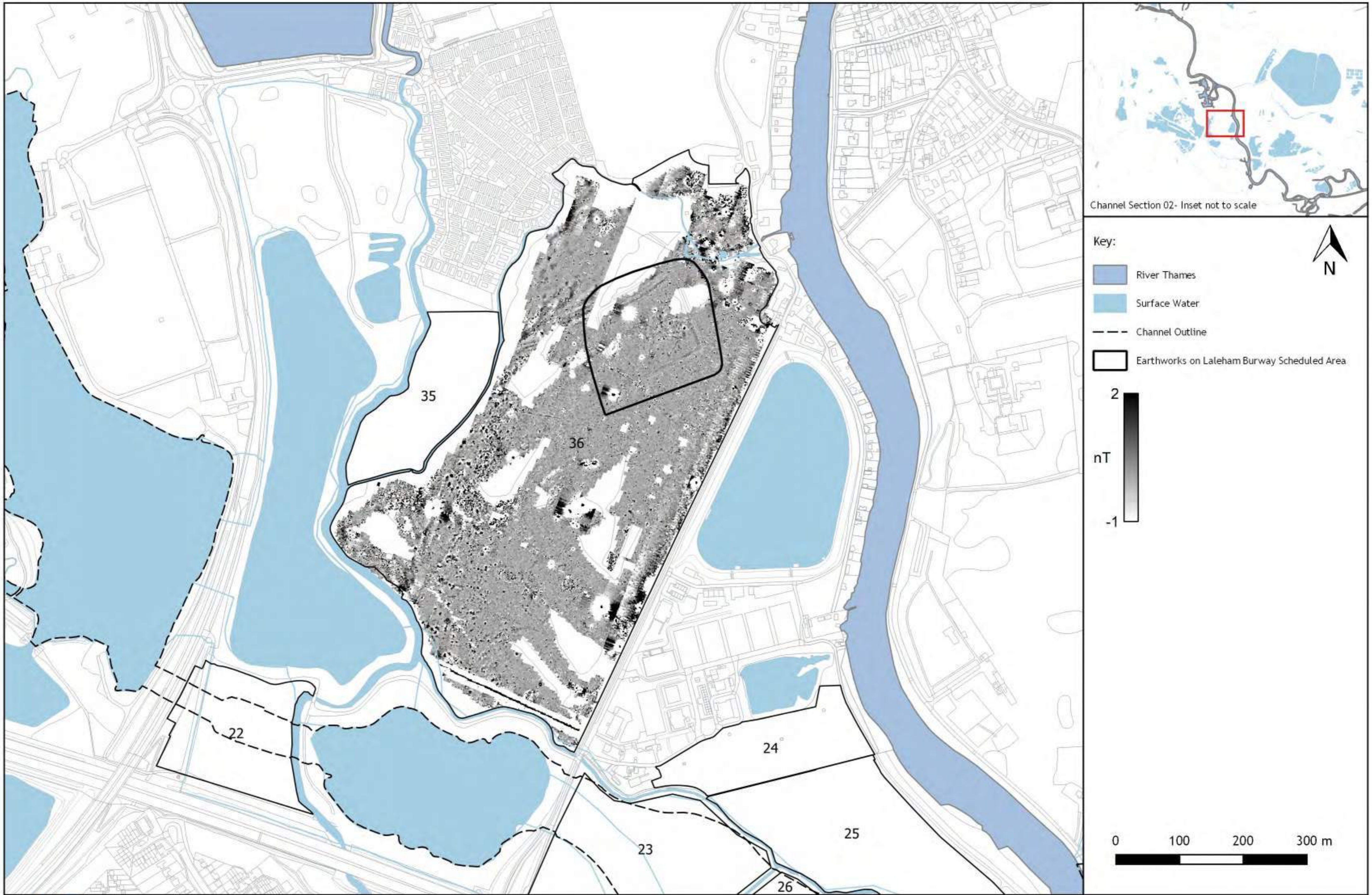
Trent & Peak ARCHAEOLOGY

Figure 8.17 Extent of Organic Alluvial Material and Archaeological Potential at Chertsey Abbey Meads.
Scale at A4: 1:5000



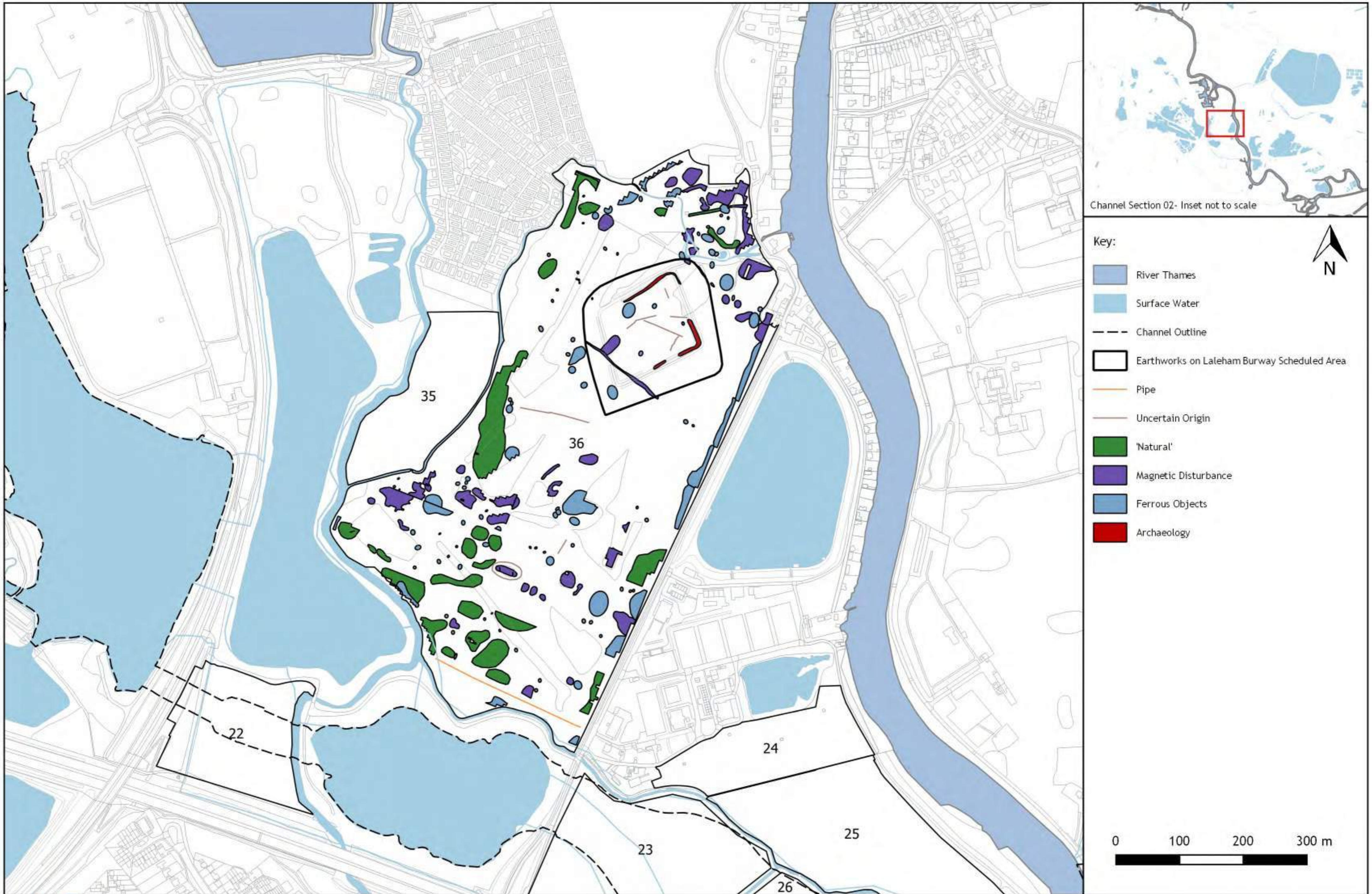
Trent & Peak ARCHAEOLOGY

Figure 9.1 Geophysics Results at Laleham (Channel Section 2)
Scale at A4: 1:8000



Trent & Peak Archaeology

Figure 9.2 Gradiometer Survey Results from Laleham Golf Course.
Scale at A4: 1:7500

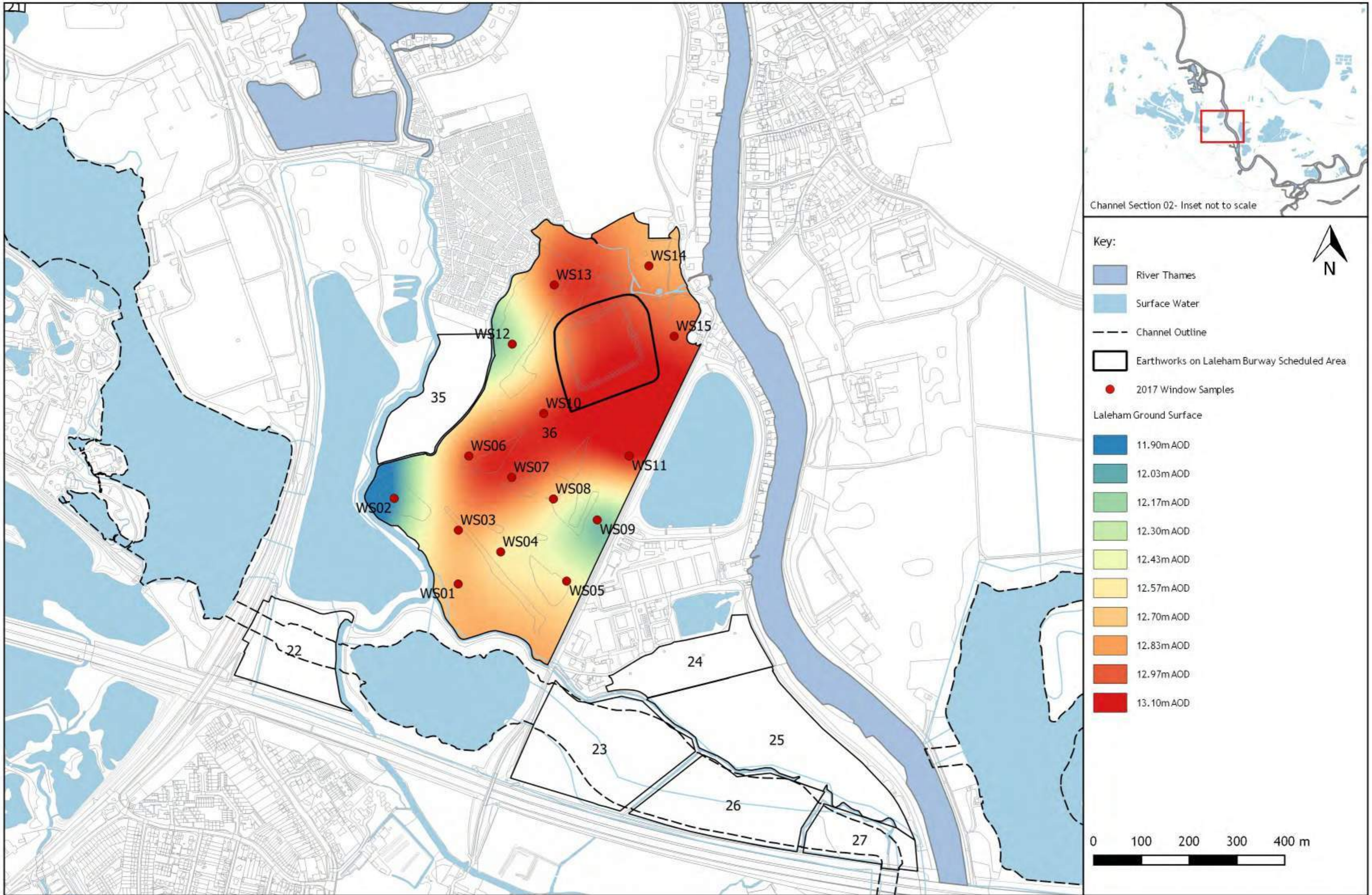


Trent & Peak ARCHAEOLOGY

Figure 9.3 Interpreted Gradiometer Survey Results from Laleham Golf Course.
Scale at A4: 1:7500

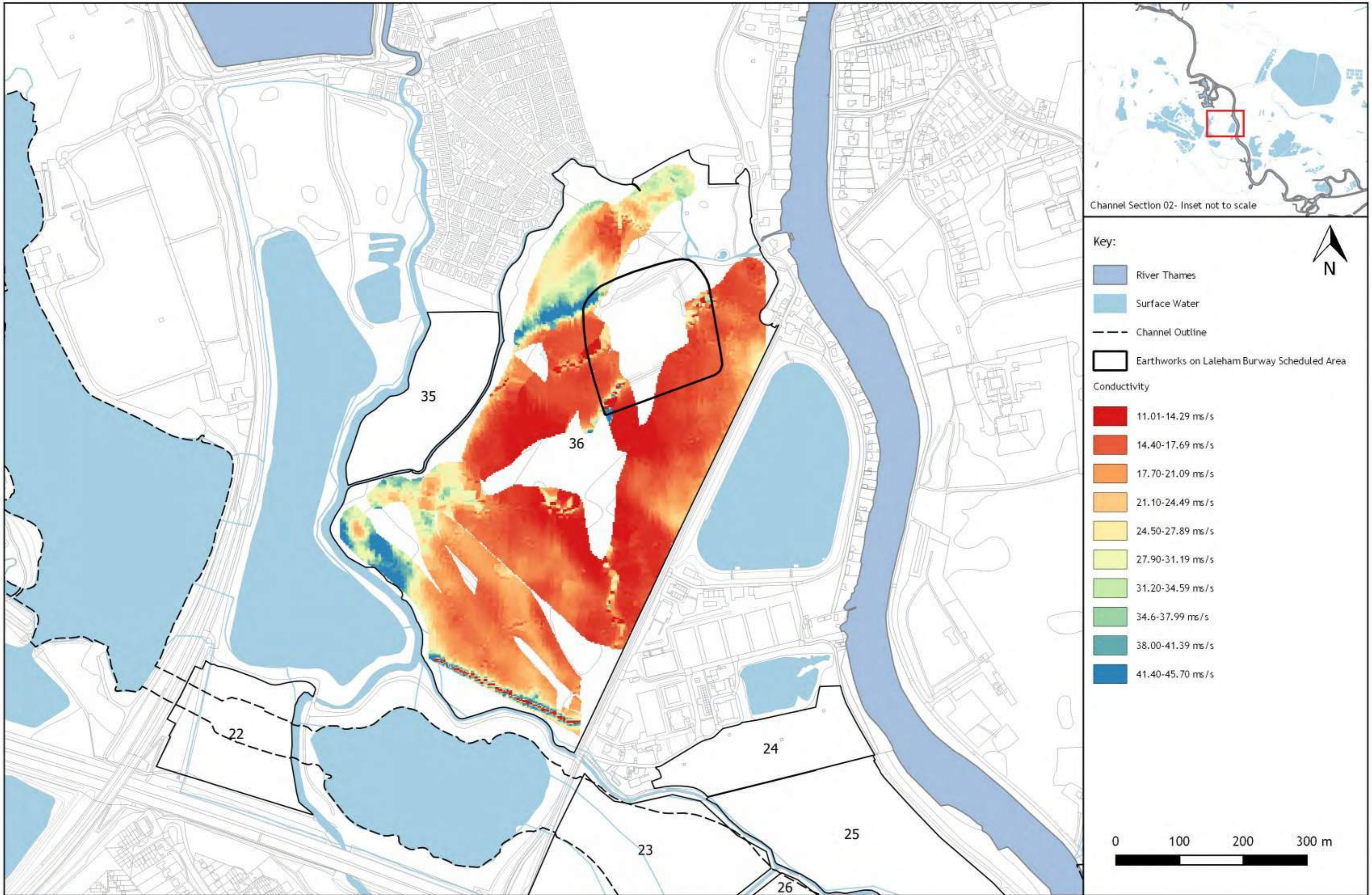
Trent & Peak Archaeology

Figure 9.4 Earthworks Survey at Laleham (Channel Section 2)
Scale at A4: 1:8000



Trent & Peak ARCHAEOLOGY

Figure 9.5 Ground Surface Level and Location of Boreholes at Laleham Golf Course.
Scale at A4: 1:10000



Trent & Peak ARCHAEOLOGY

Figure 9.6 EM Results from Laleham Golf Course.
Scale at A4: 1:7500

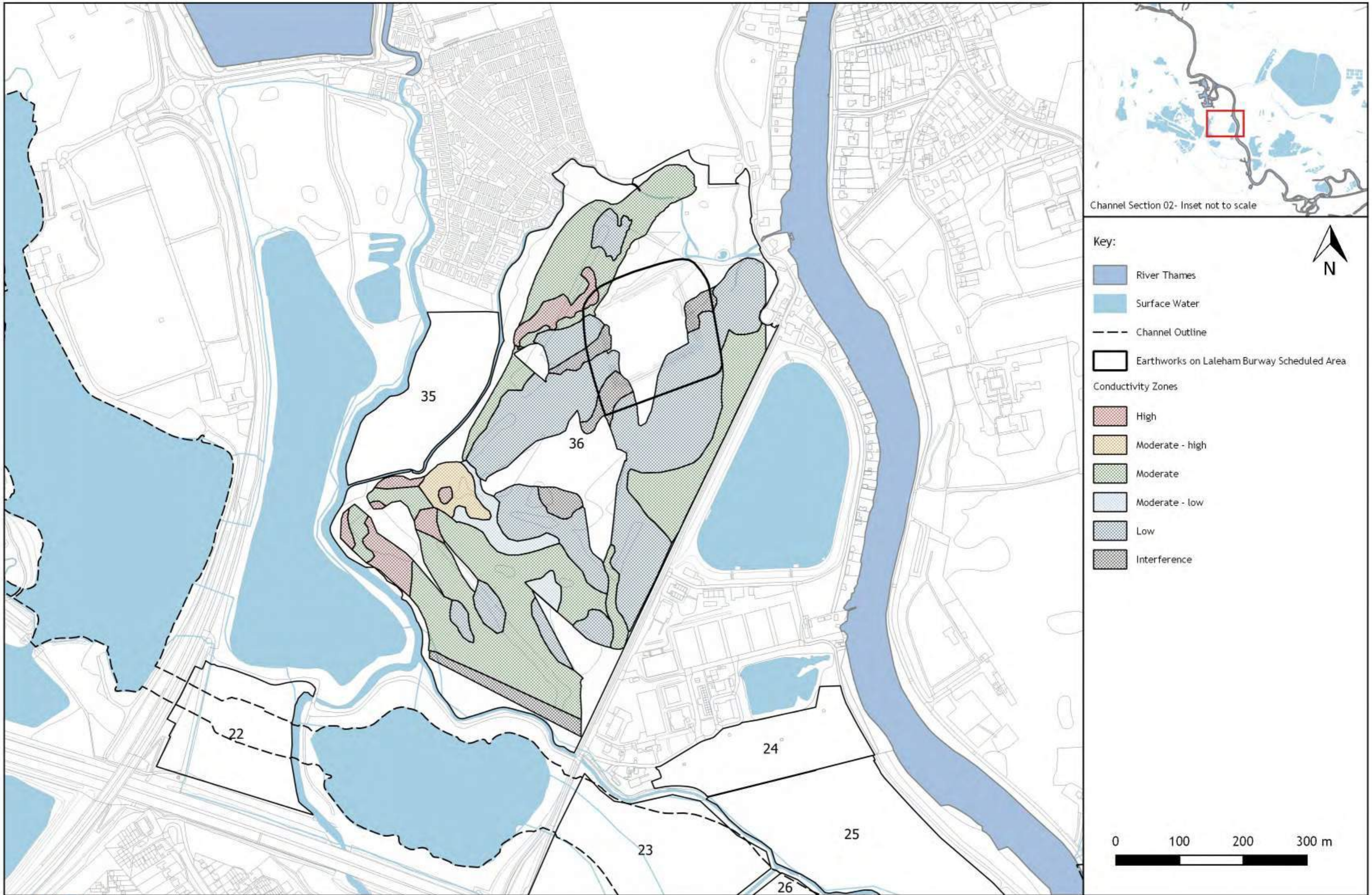


Figure 9.7 EM Conductivity Zones at Laleham Golf Course.
Scale at A4: 1:7500

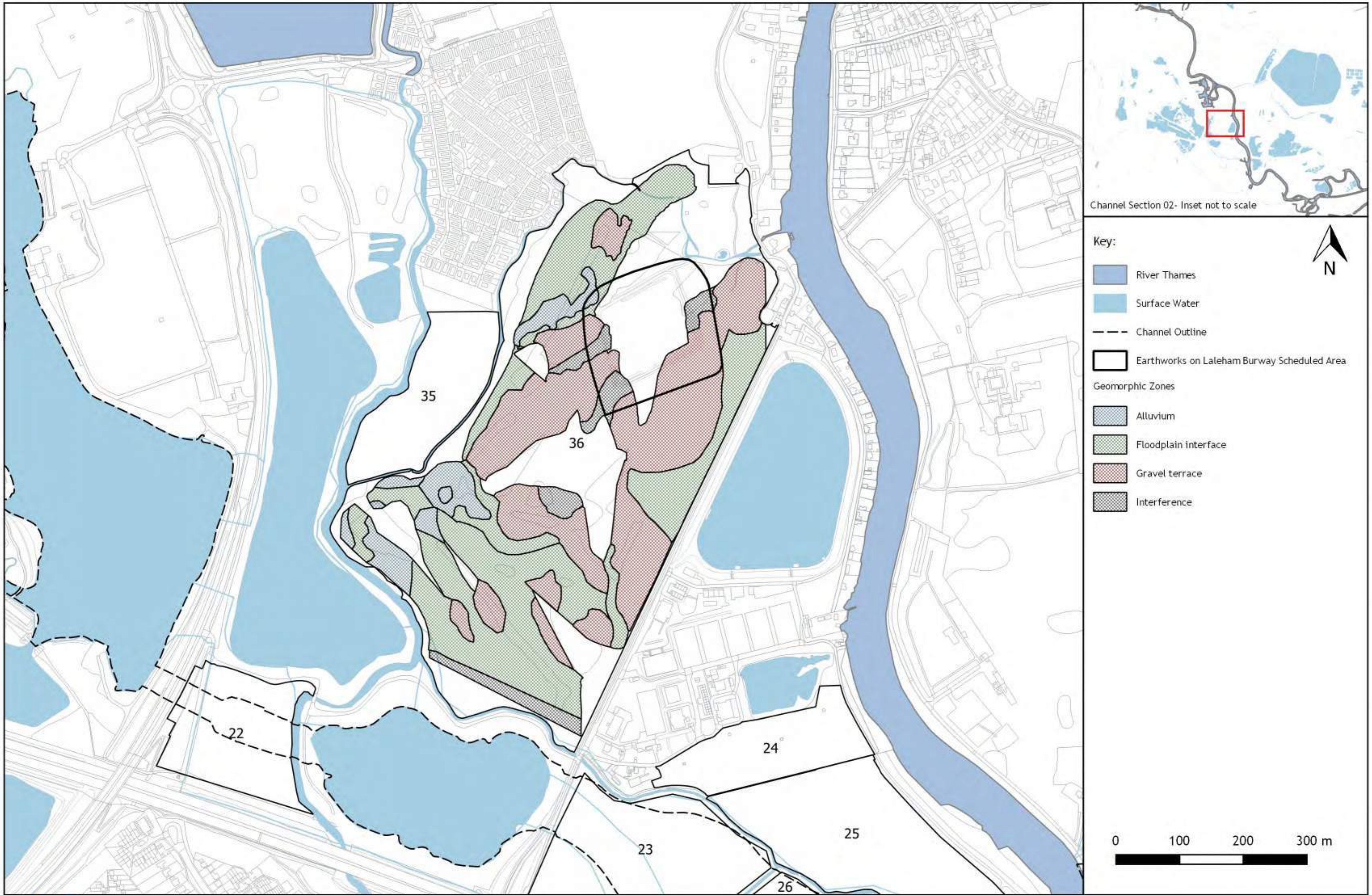


Figure 9.8 Geomorphic Zones Derived from EM Survey at Laleham Golf Course.
Scale at A4: 1:7500

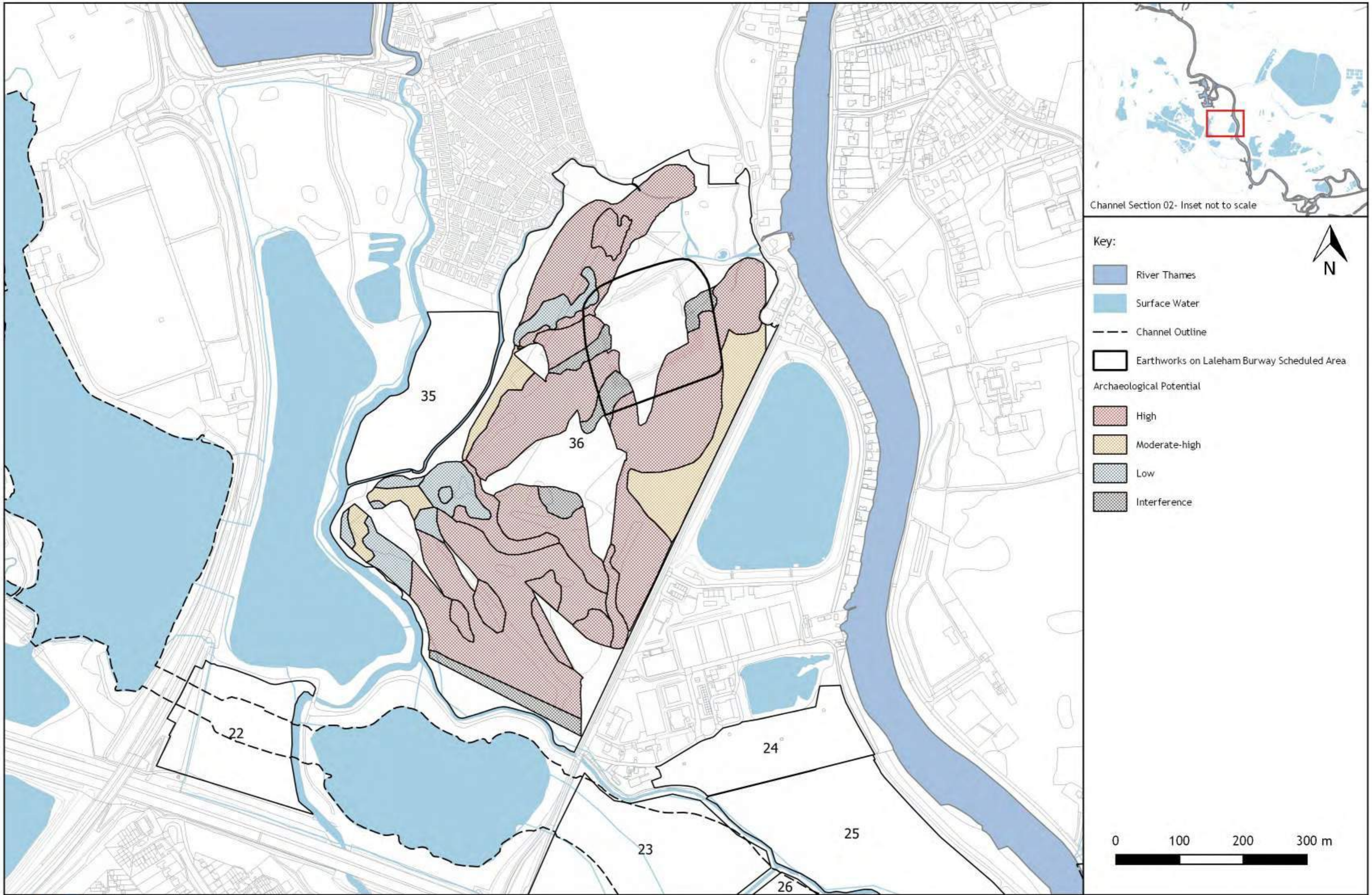
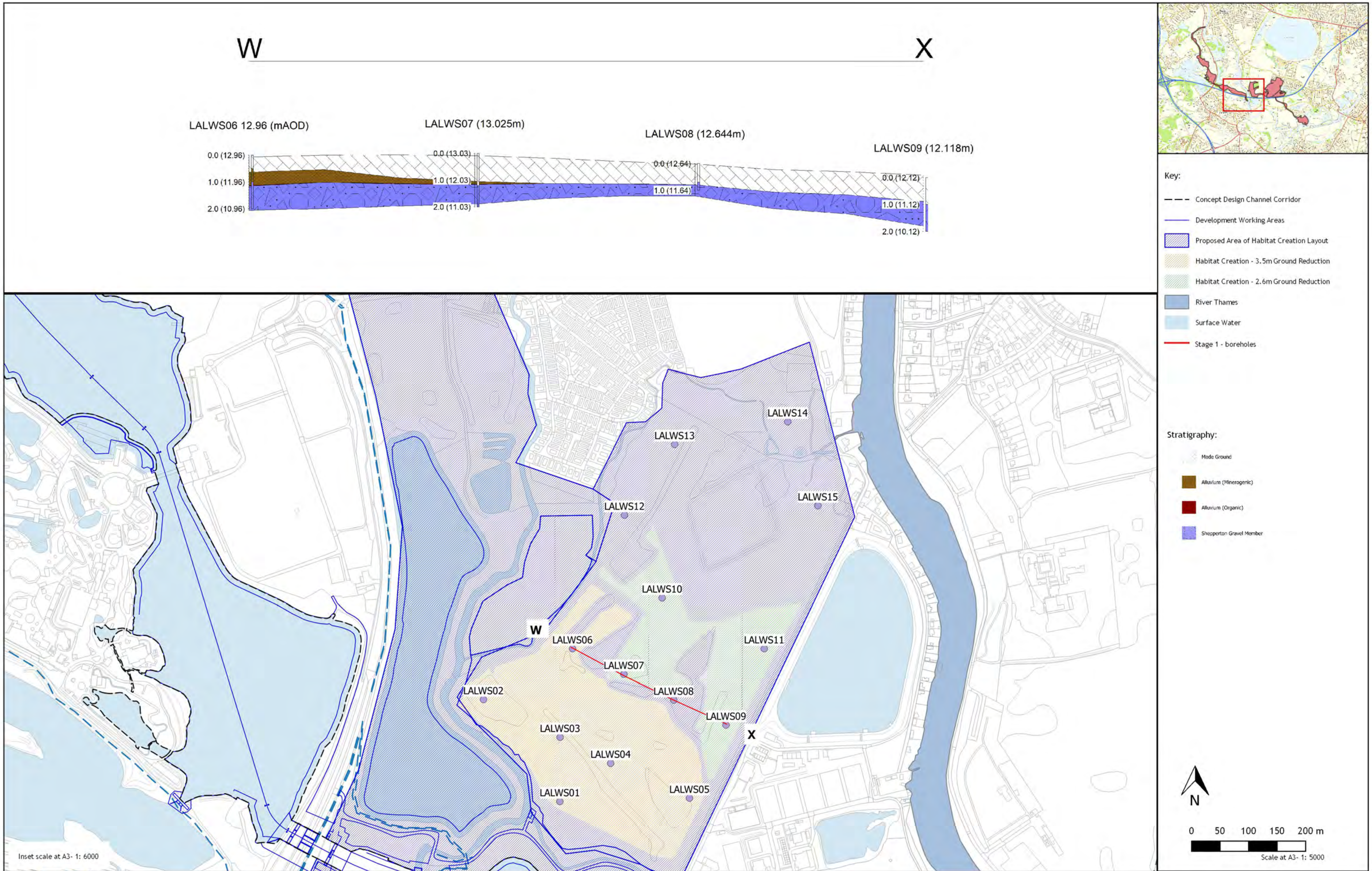


Figure 9.9 Archaeological Potential from EM results at Laleham Golf Course.
Scale at A4: 1:7500

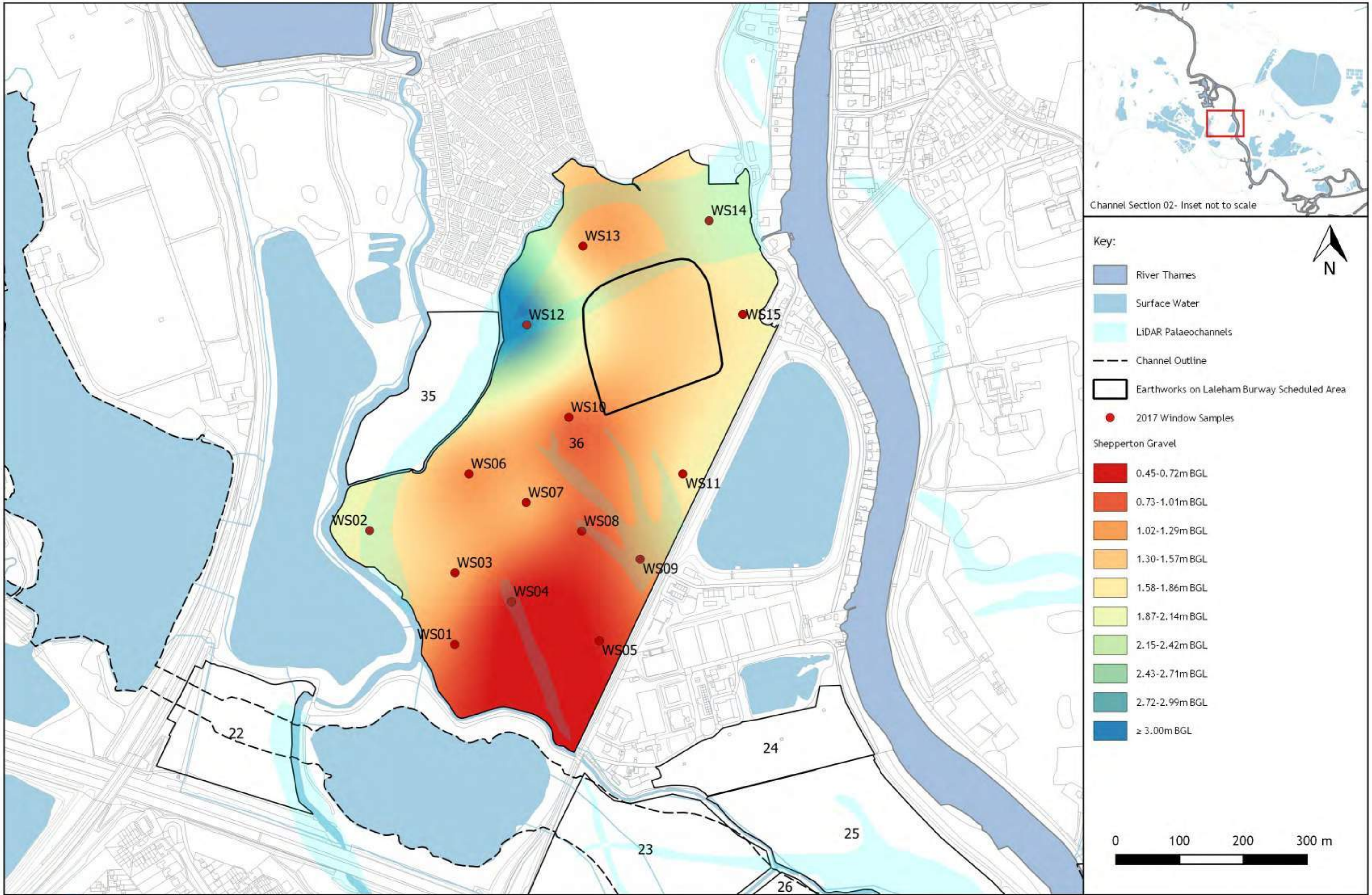
Trent & Peak ARCHAEOLOGY

Figure 9.10 Transect Section U-V of RTS stage 1 boreholes - Channel Section 2 (Laleham)
Scale at A3: varies



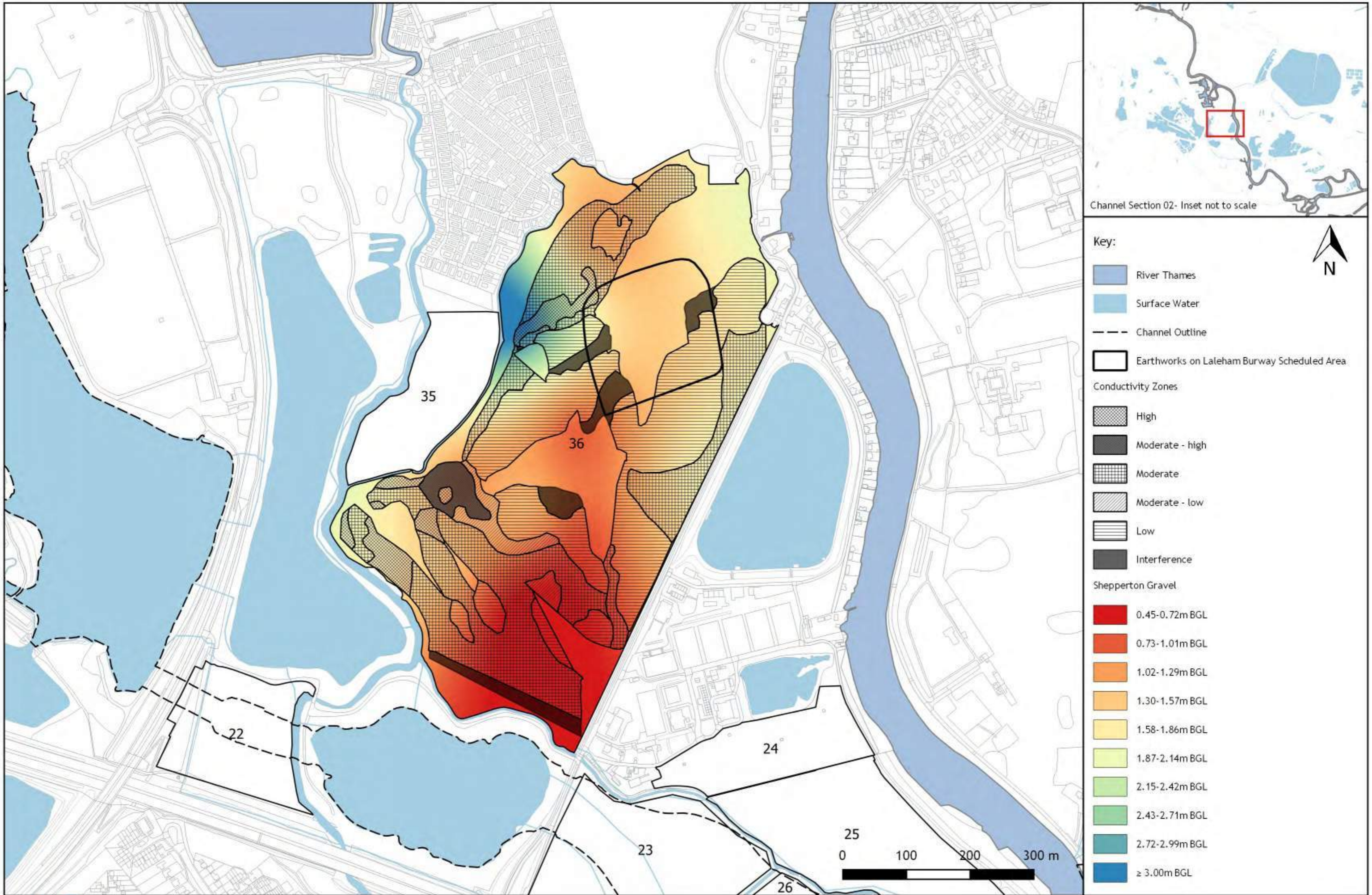
Trent & Peak ARCHAEOLOGY

Figure 9.11 Transect Section W-X of RTS stage 1 boreholes - Channel Section 2 (Laleham)
Scale at A3: varies



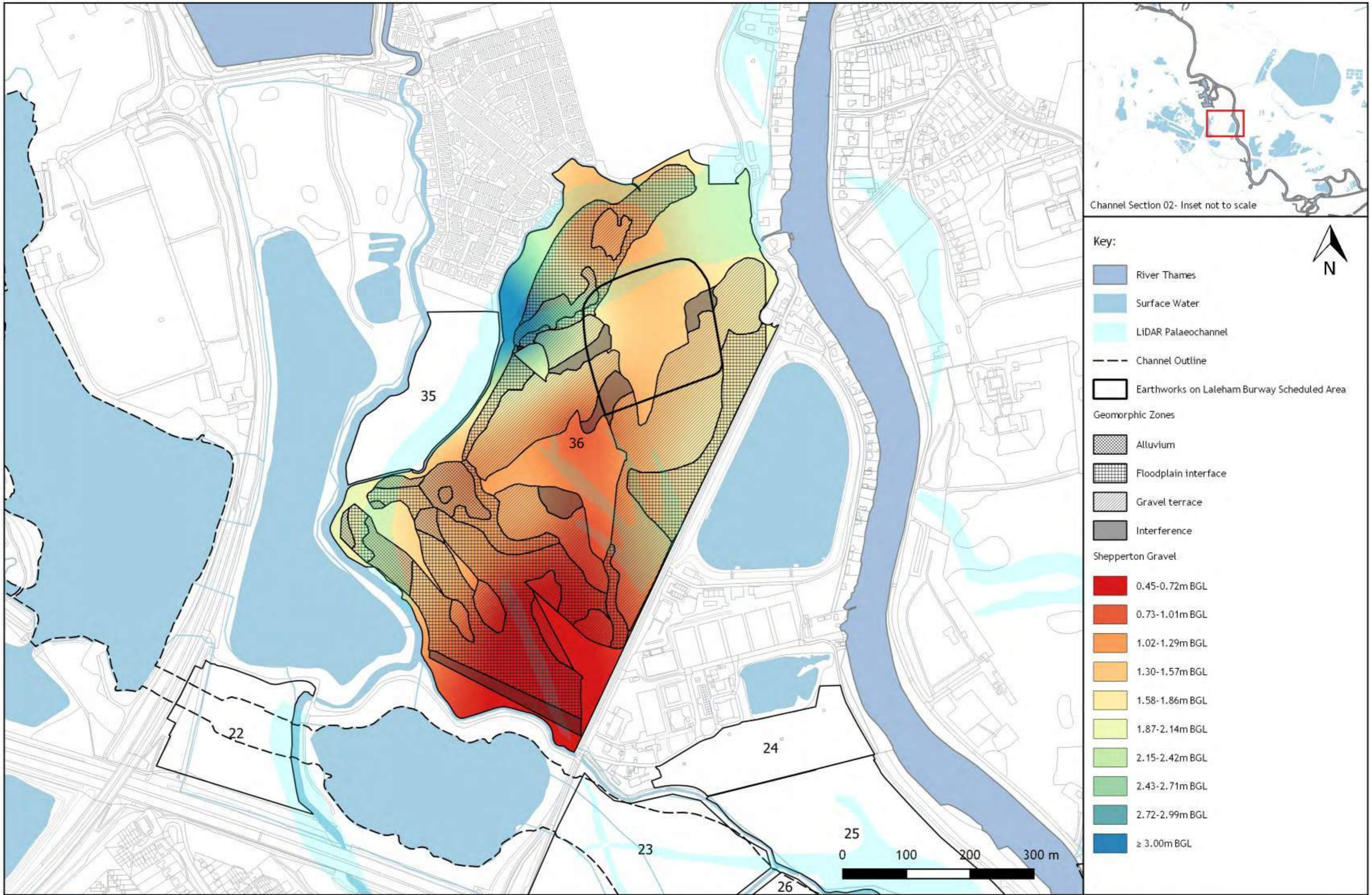
tp Trent & Peak ARCHAEOLOGY

Figure 9.12 Depths of Shepperton Gravel at Laleham Golf Course.
Scale at A4: 1:7500



Trent & Peak ARCHAEOLOGY

Figure 9.13 Depths of Shepperton Gravel and Conductivity Zones at Laleham Golf Course.
Scale at A4: 1:7500



Trent & Peak Archaeology

Figure 9.14 Depths of Shepperton Gravel and Geomorphic Zones at Laleham Golf Course.
Scale at A4: 1:7500

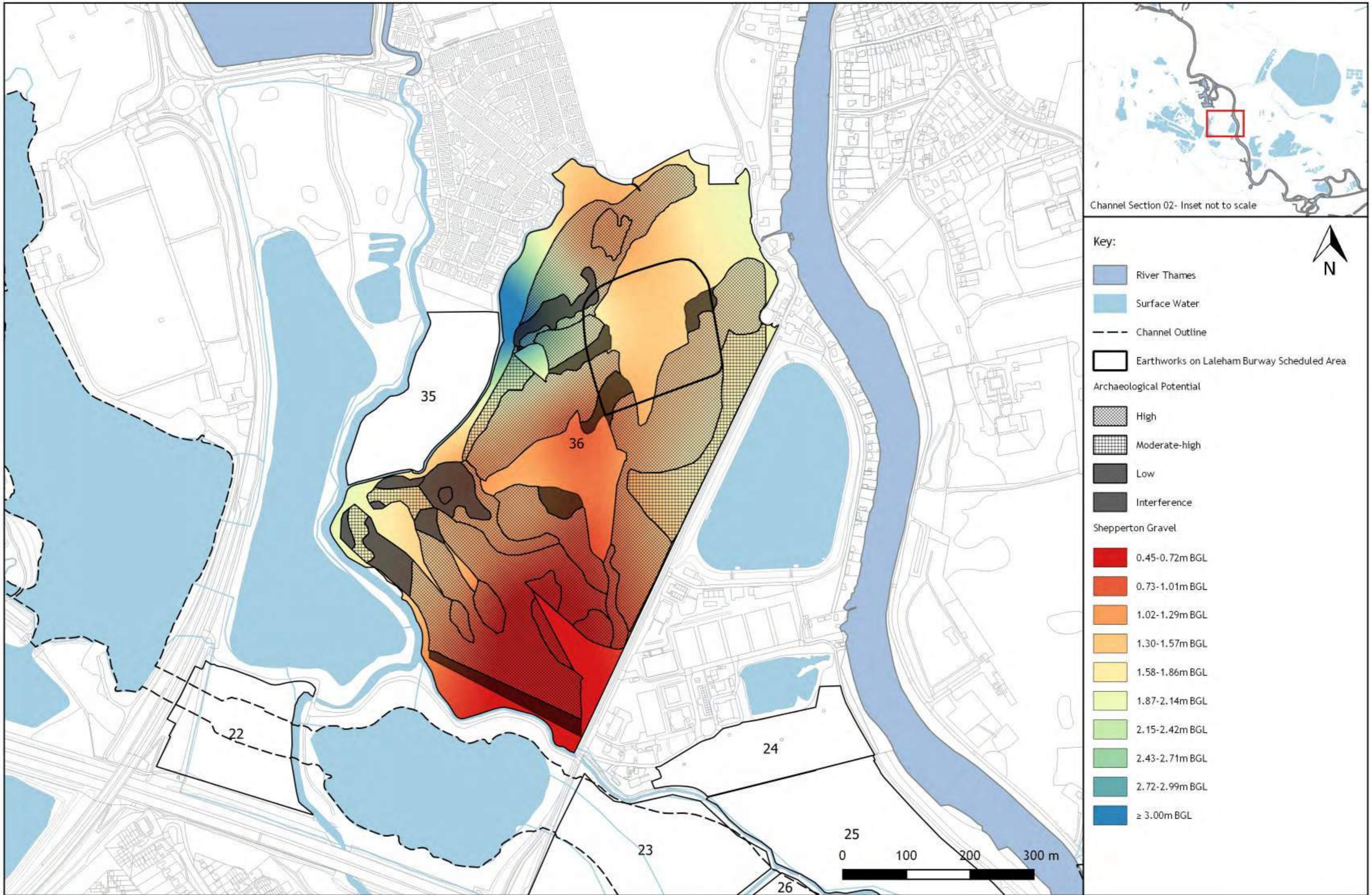


Figure 9.15 Depths of Shepperton Gravel and Archaeological Potential at Laleham Golf Course.
Scale at A4: 1:7500

Trent & Peak Archaeology

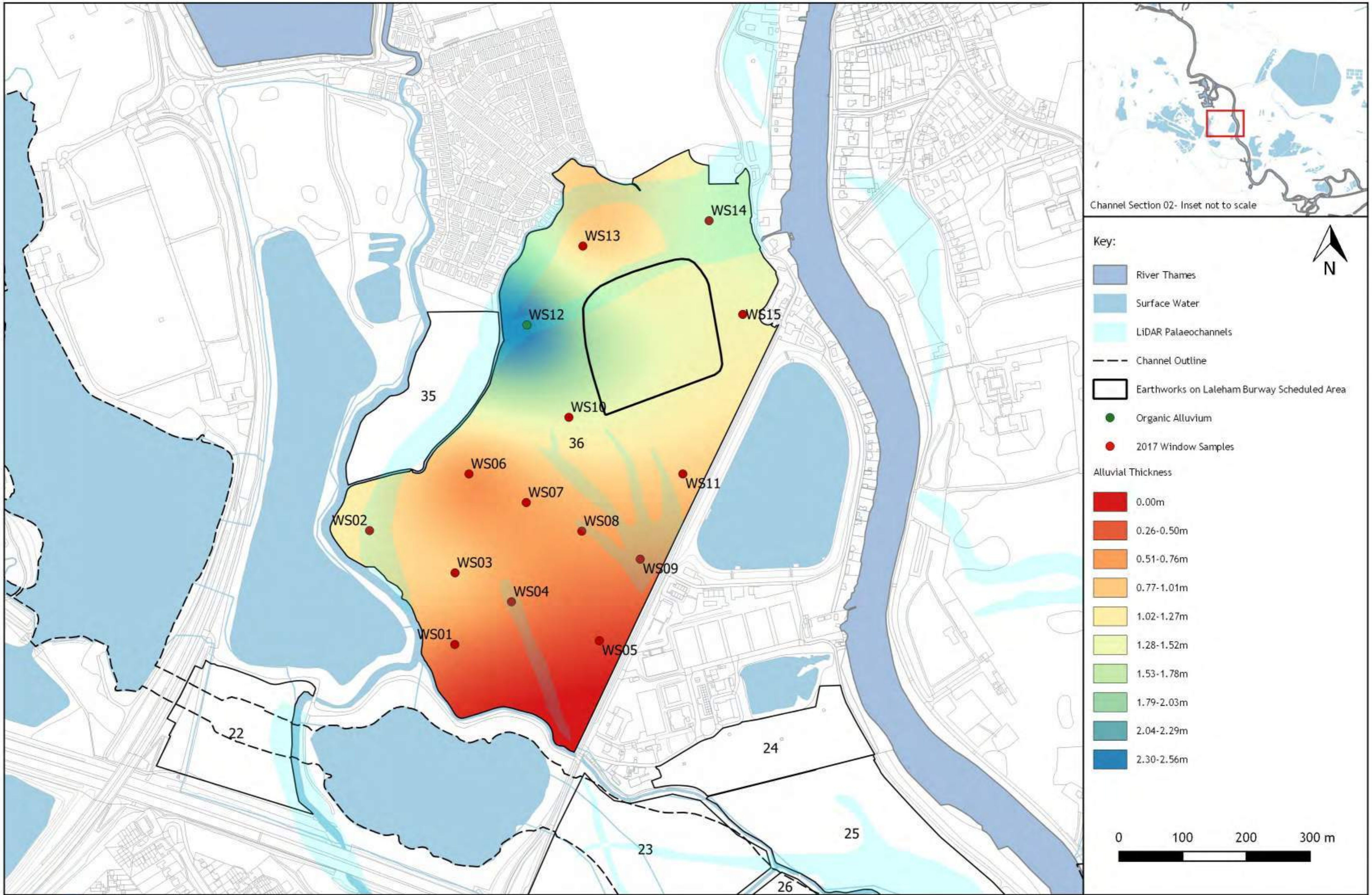
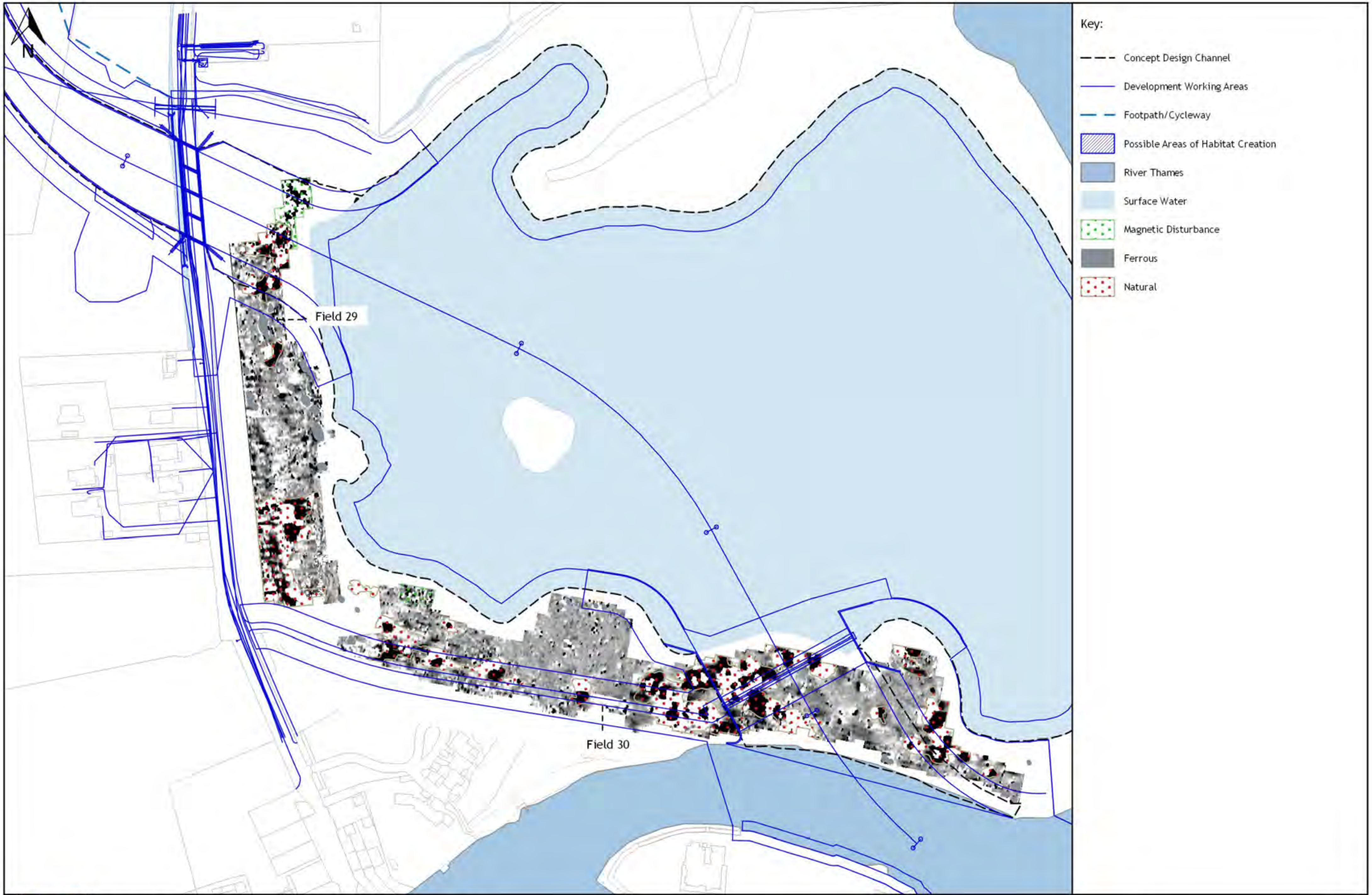


Figure 9.16 Extent of Alluvial Deposits at Laleham Golf Course.
Scale at A4: 1:7500



Trent & Peak Archaeology

Figure 10.1 Geophysics Results at Shepperton (Channel Section 3)
Scale at A4: 1:2500

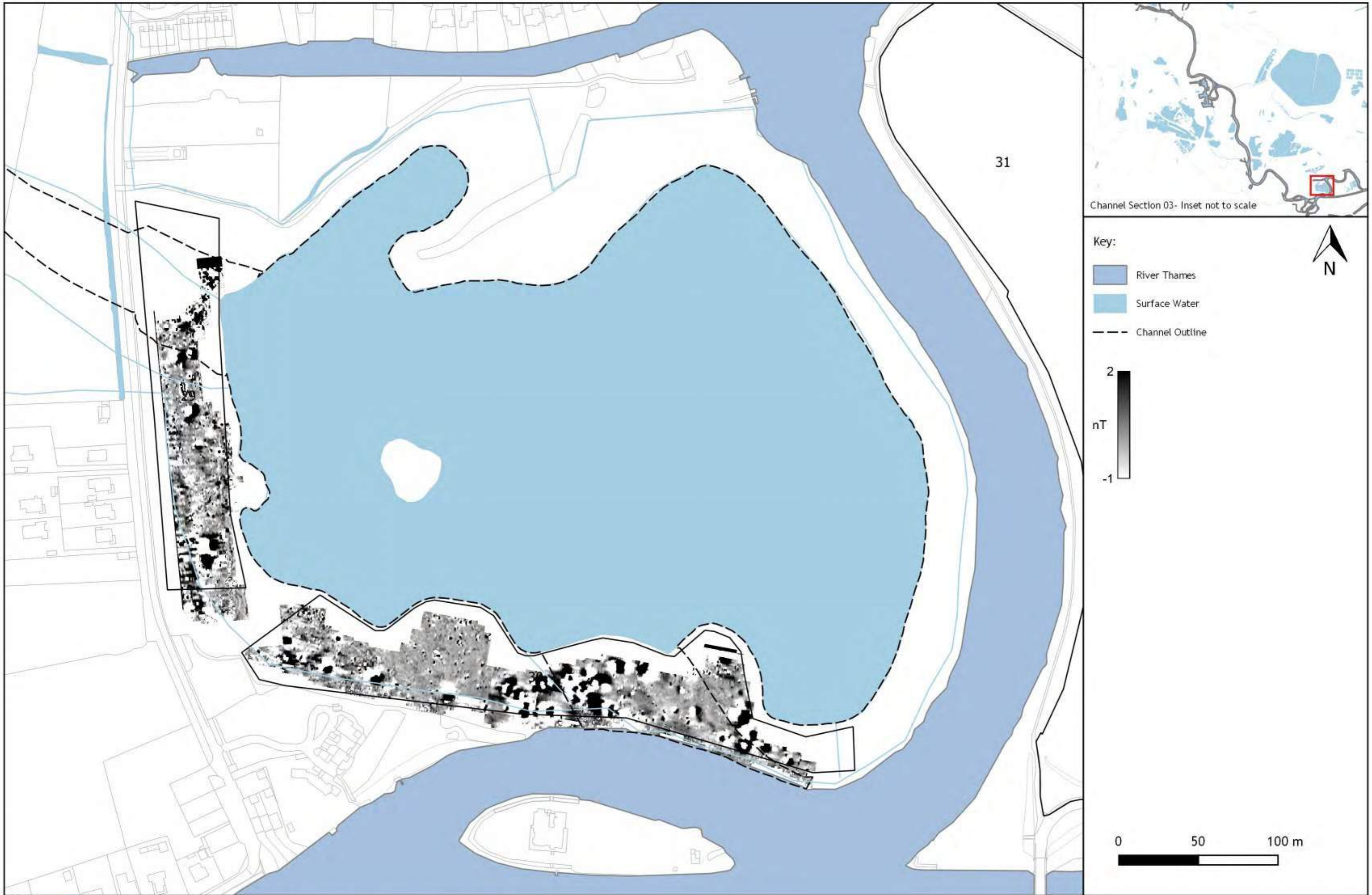
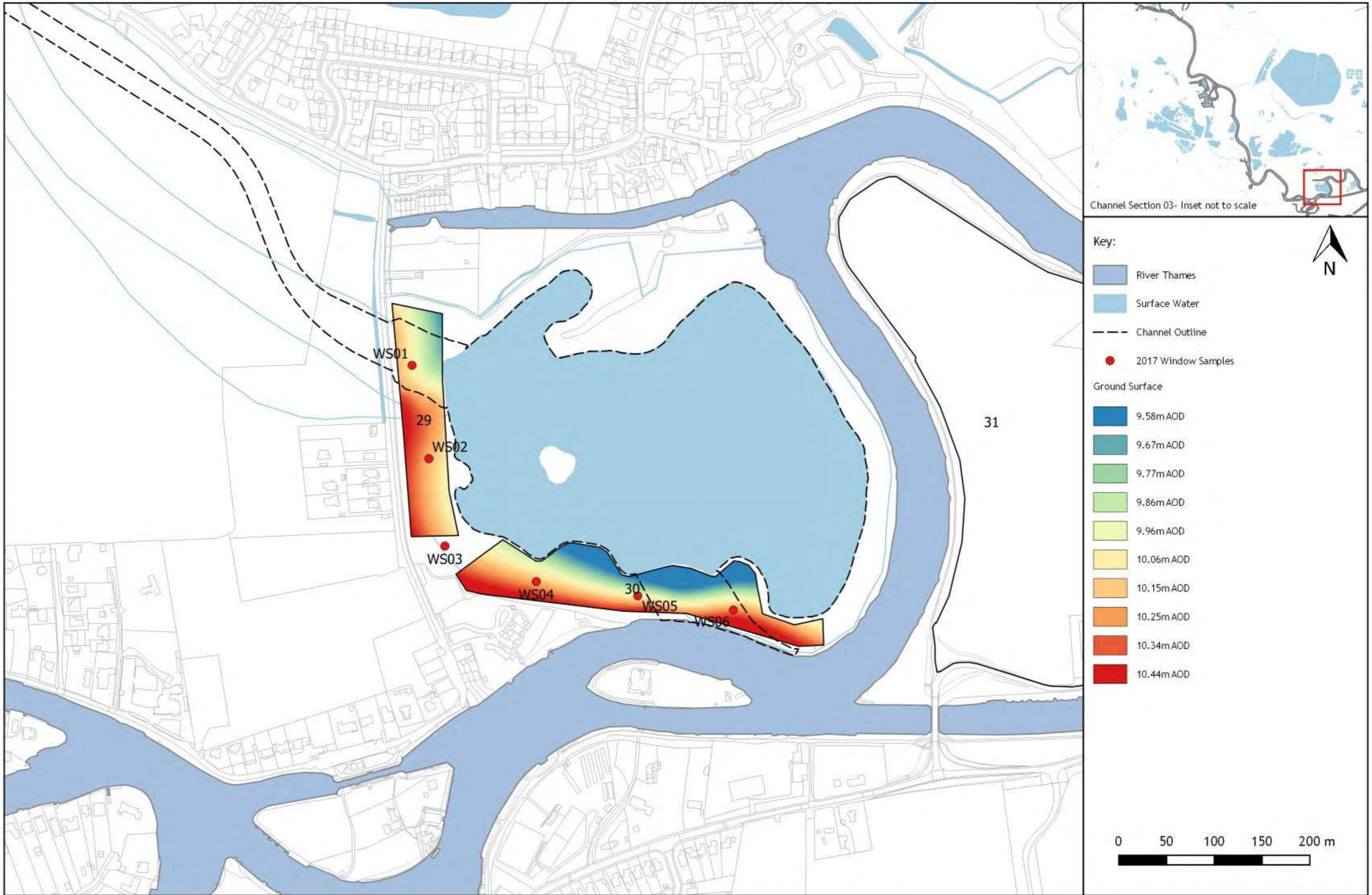


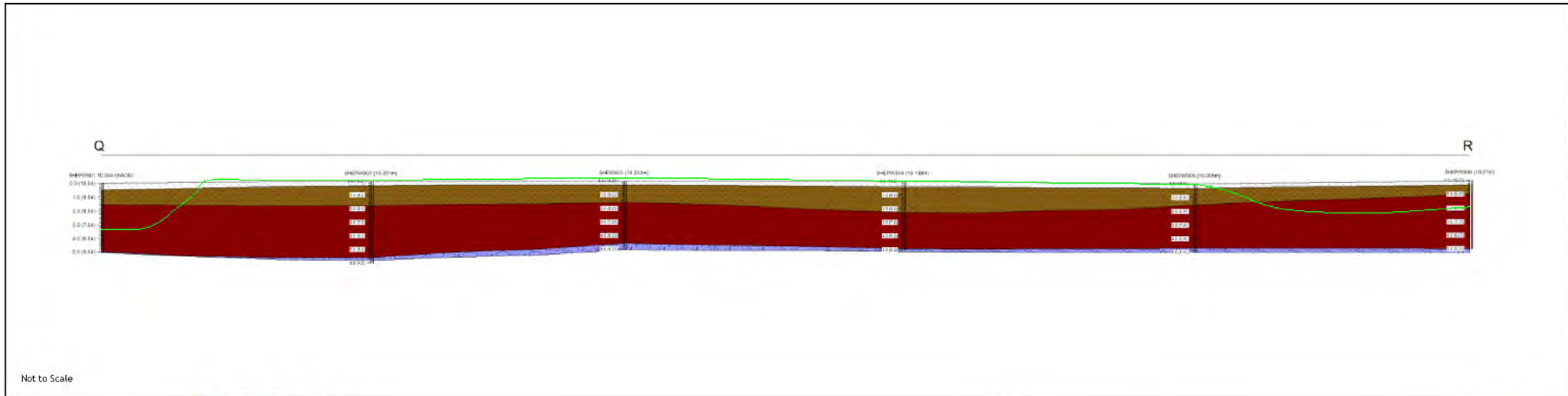
Figure 10.2 Gradiometer Survey Results from Shepperton.
Scale at A4: 1:3000

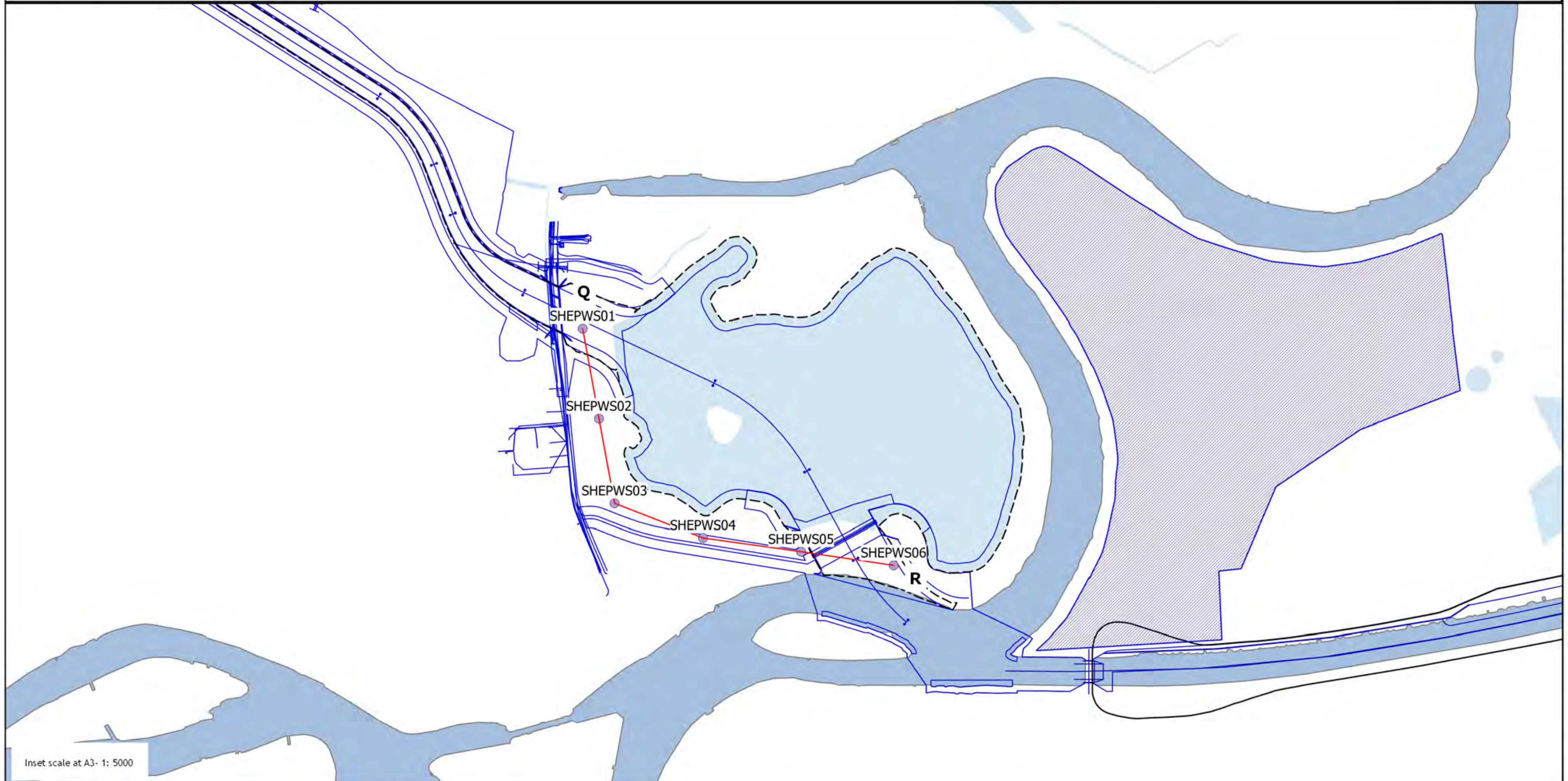
Figure 10.3 Interpreted Gradiometer Survey Results from Shepperton.
Scale at A4: 1:3000

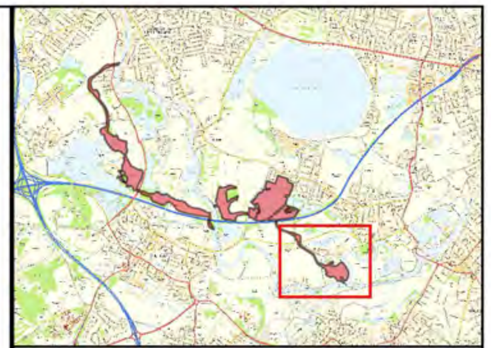


Trent & Peak ARCHAEOLOGY

Figure10.4 Ground Surface Level and Borehole Locations at Shepperton.
Scale at A4: 1:5000







Key:

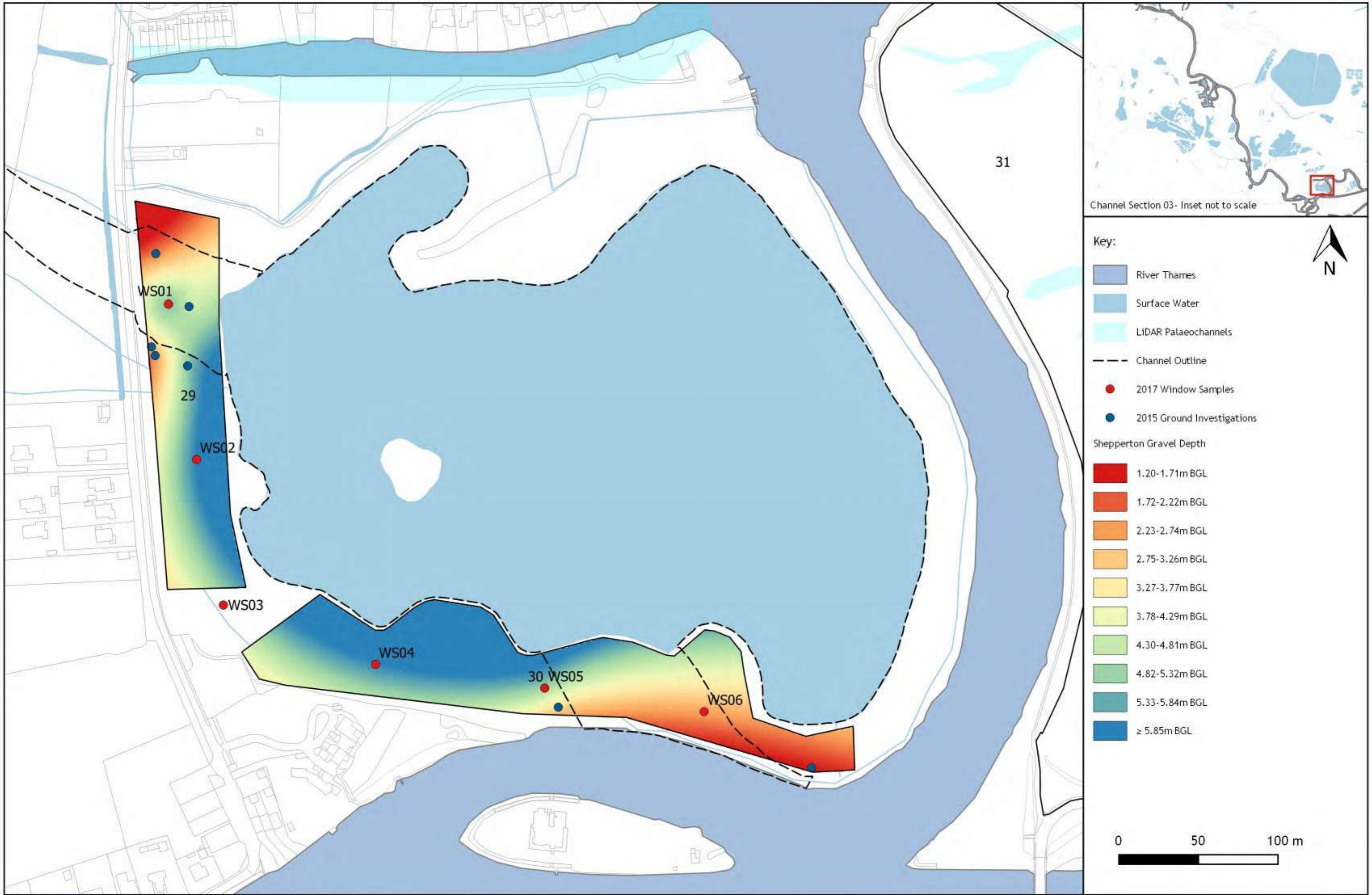
- Concept Design Channel Corridor
- Development Working Areas
- Possible Areas of Habitat Creation
- River Thames
- Surface Water
- Cross Section
- Indicative Bed Level (mAOD)
- Stage 1 - boreholes

Stratigraphy:

- Made Ground
- Holocene Alluvium
- Shepperton Gravel Mem
- London Clay

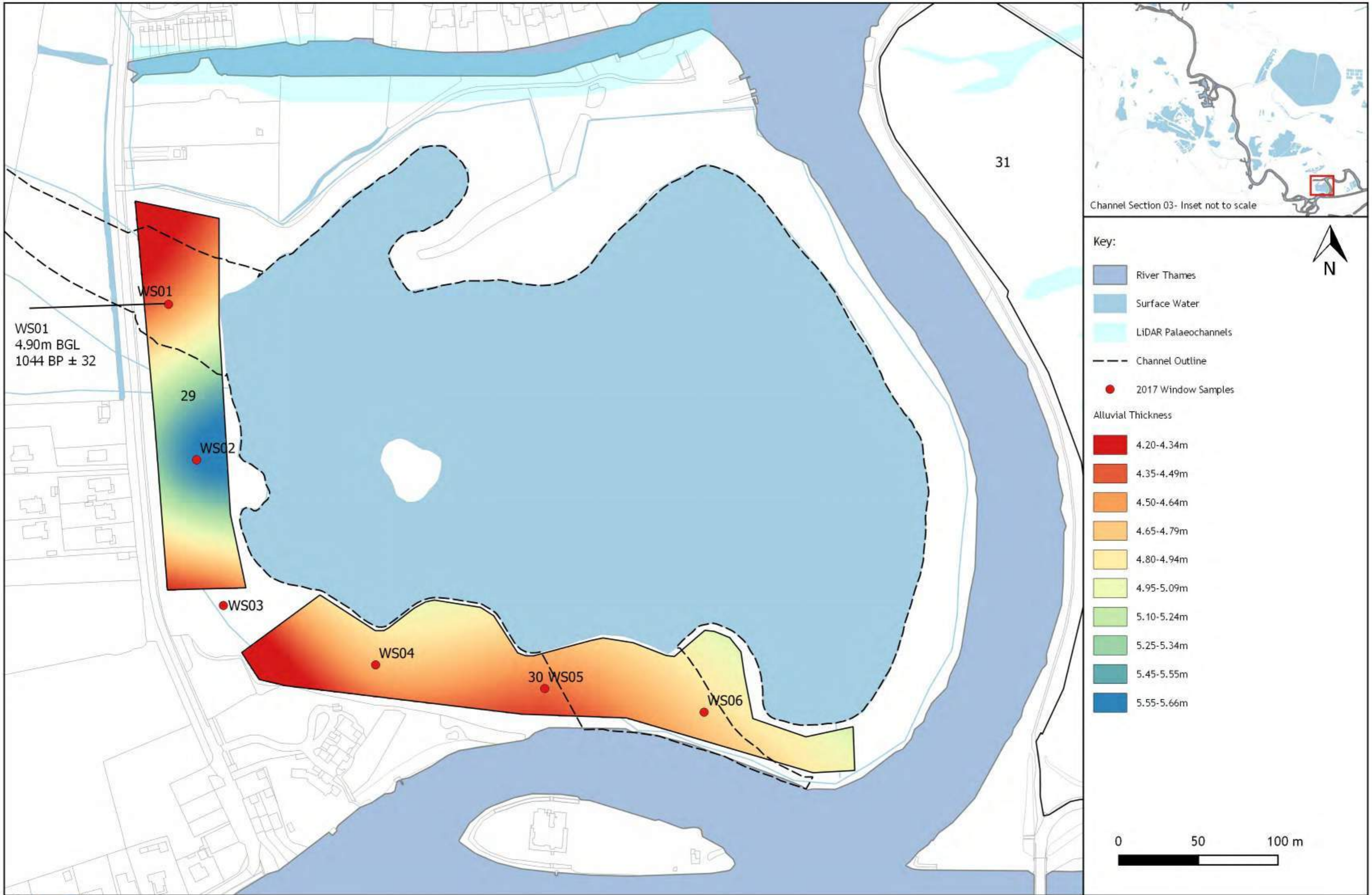
Trent & Peak ARCHAEOLOGY

Figure 10.5 Transect Section Q-R of RTS5 stage 1 boreholes Indicative Bed Level Depths- Channel Section 3 (Shepperton)
Scale at A3: varies



Trent & Peak ARCHAEOLOGY

Figure10.6 Depths of Shepperton Gravel at Shepperton
Scale at A4: 1:3000



Trent & Peak ARCHAEOLOGY

Figure 10.7 Extent of Alluvium at Shepperton
Scale at A4: 1:3000

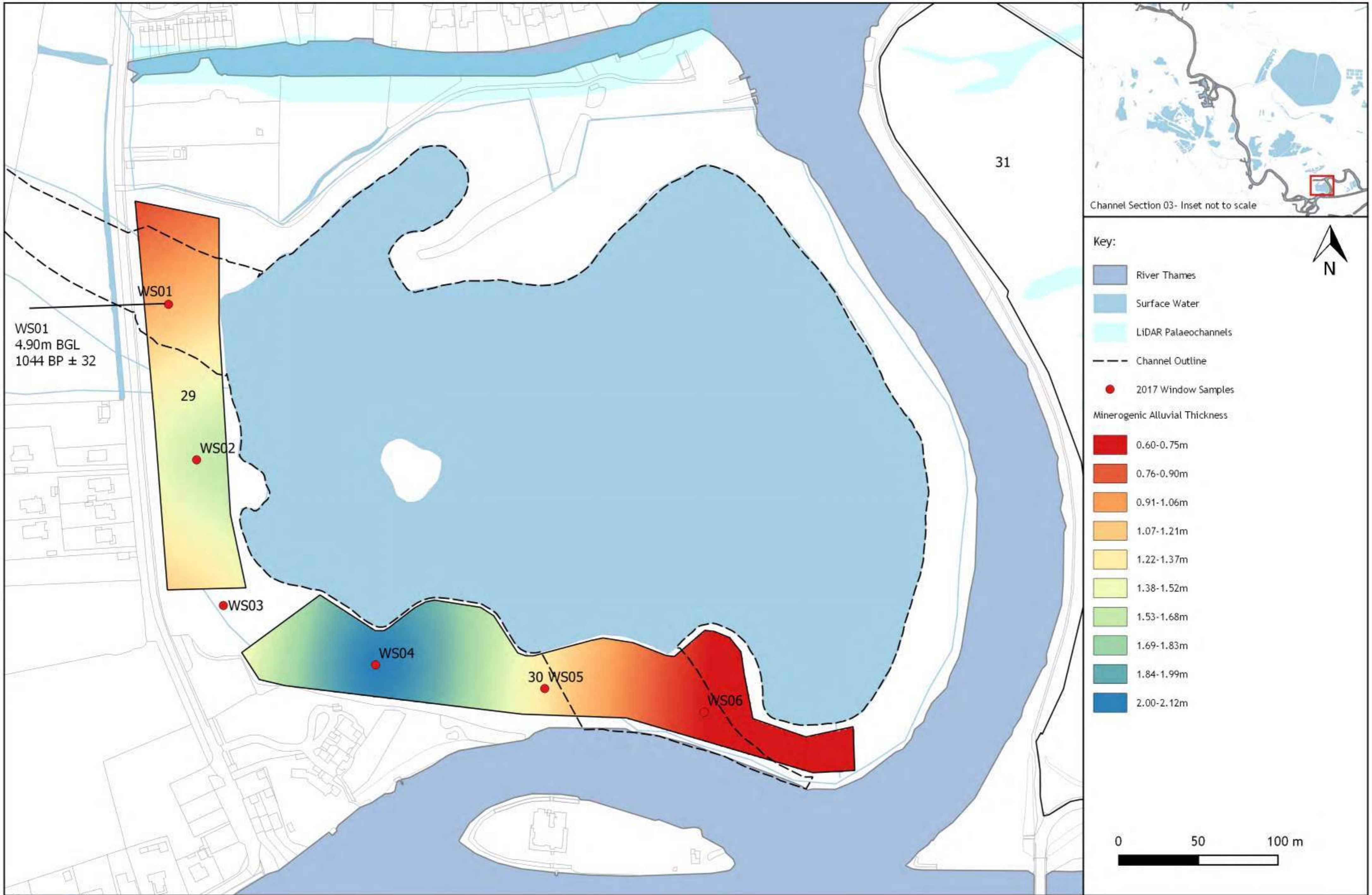


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Figure 10.8 Extent of Minerogenic Alluvium at Shepperton
Scale at A4: 1:3000

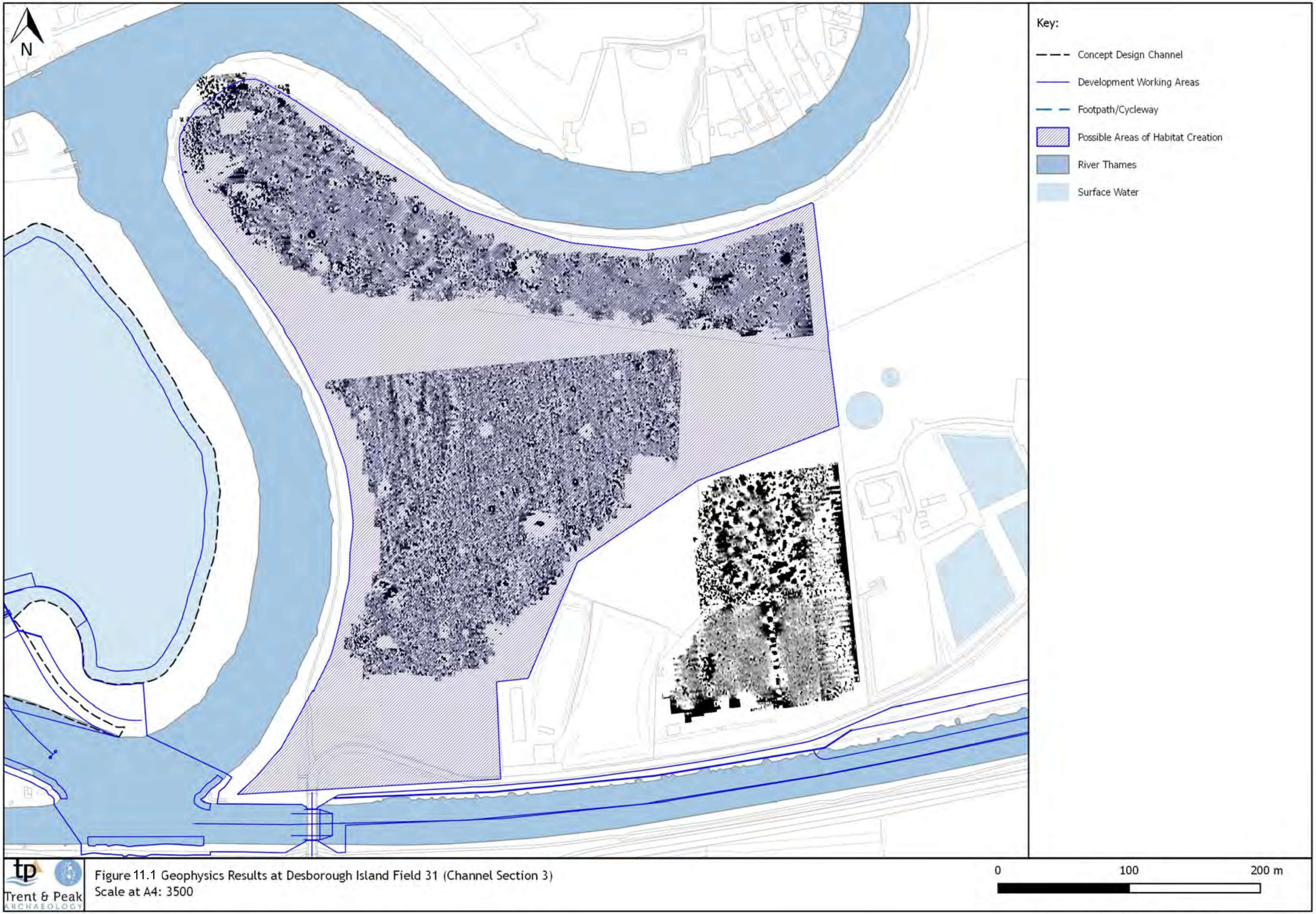
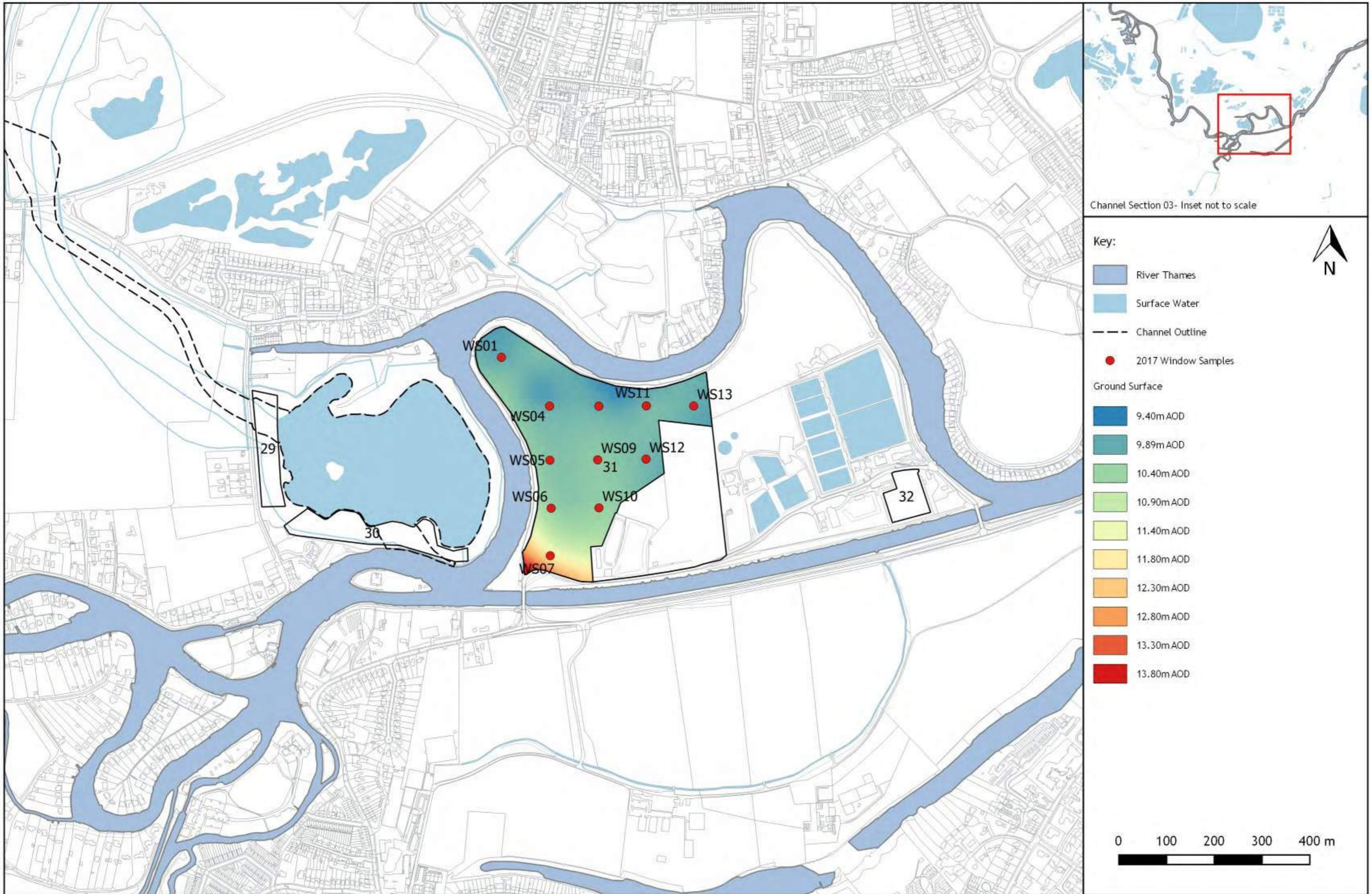


Figure 11.1 Geophysics Results at Desborough Island Field 31 (Channel Section 3)
Scale at A4: 3500



Trent & Peak Archaeology

Figure 11.2 Ground Surface Level and Borehole Locations at Desborough Island.
Scale at A4: 1:10000

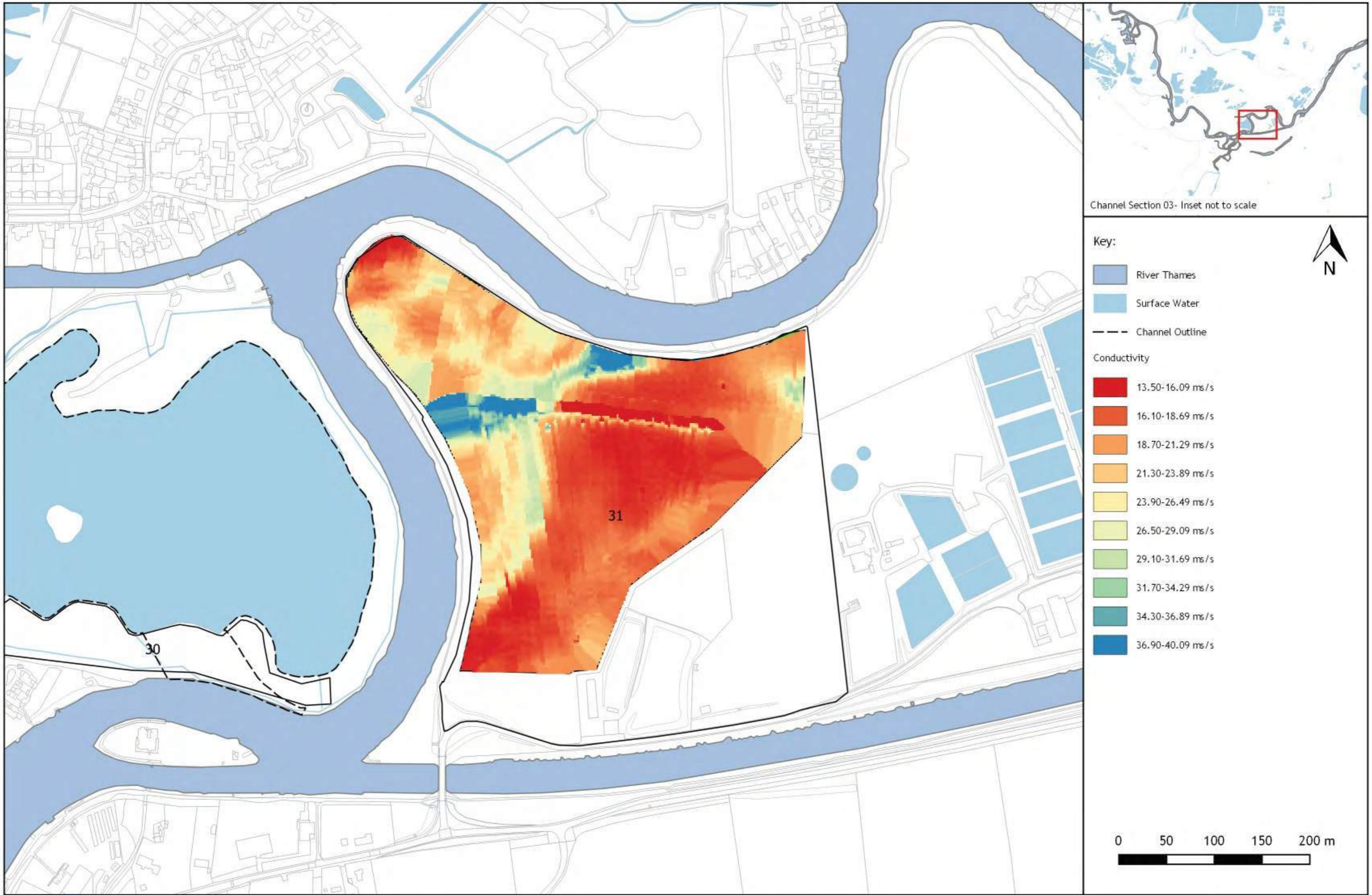
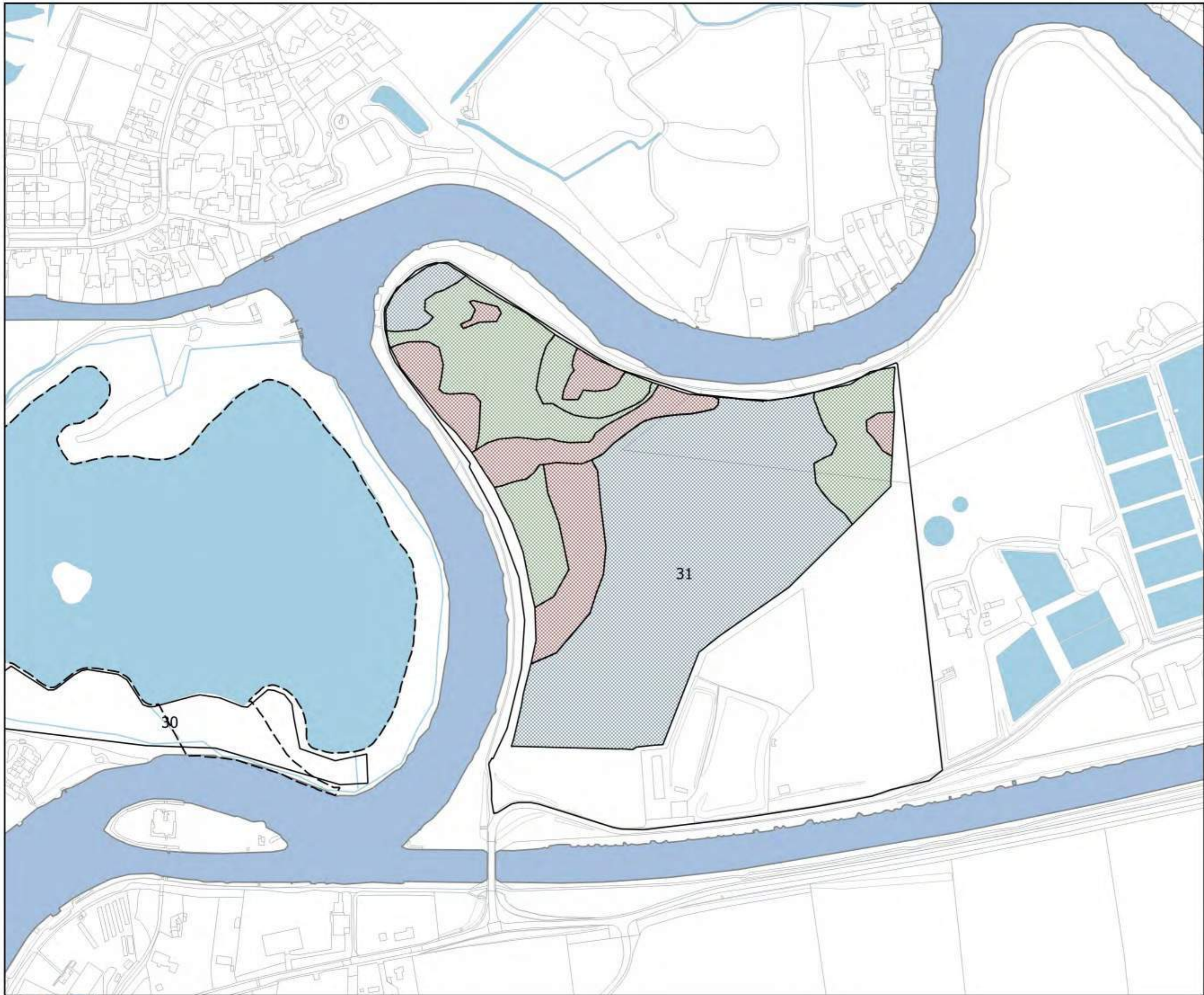
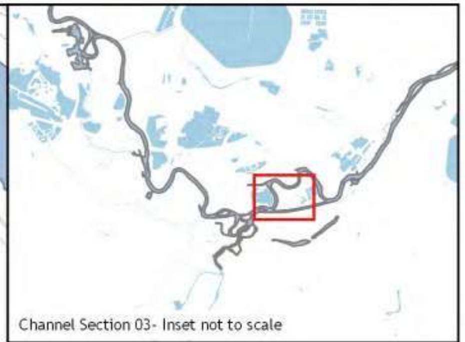


Figure 11.3 EM Survey Results at Desborough Island.
Scale at A4: 1:5000

Trent & Peak ARCHAEOLOGY





Key:

- River Thames
- Surface Water
- Channel Outline

Conductivity Zones

- High
- Moderate
- Low

N

0 50 100 150 200 m

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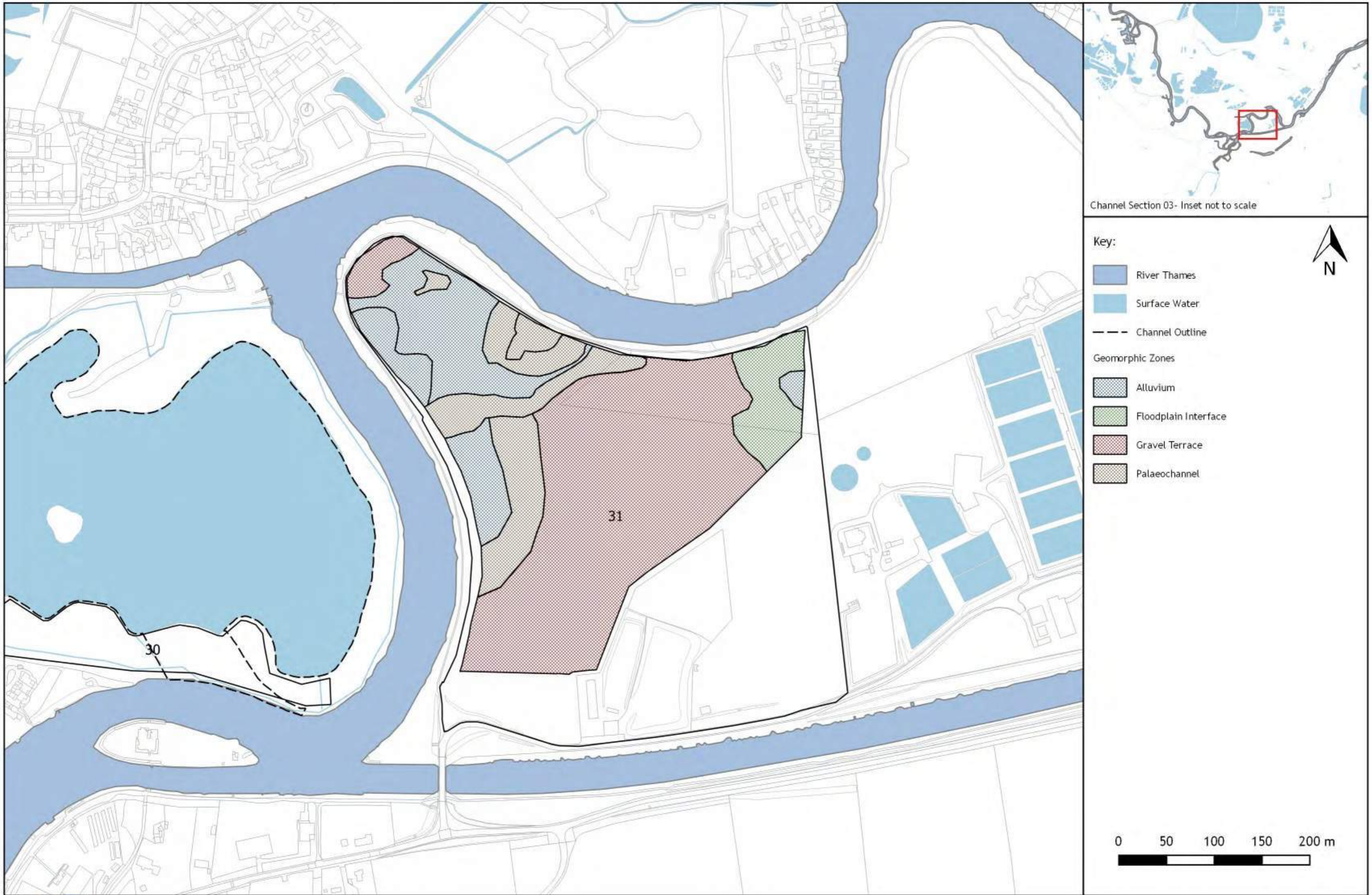
Figure 11.4 Conductivity Zones at Desborough Island.
Scale at A4: 1:5000



Trent & Peak Archaeology

Figure 11.5 Geomorphic Zones at Desborough Island.
Scale at A4: 1:5000

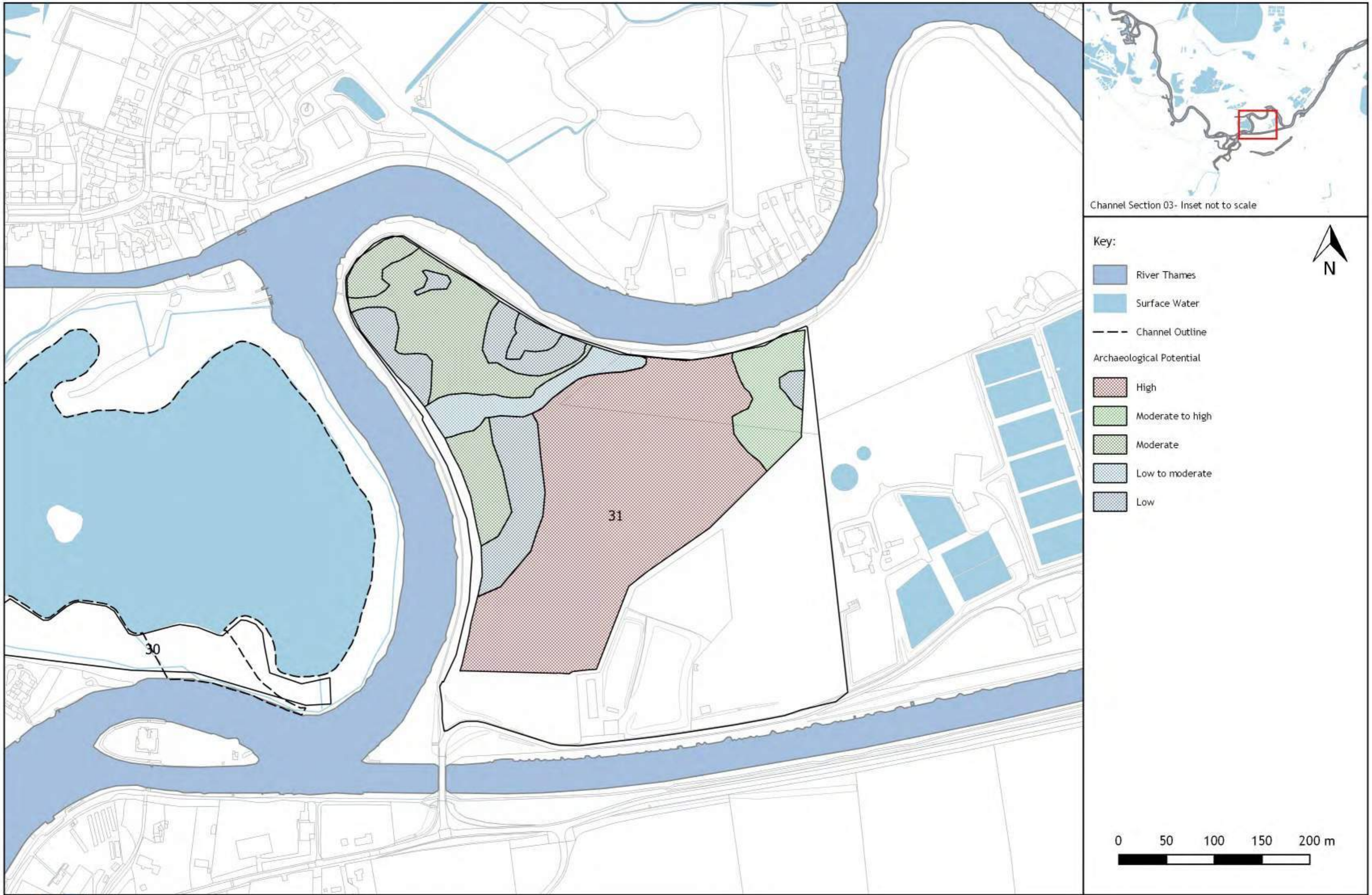
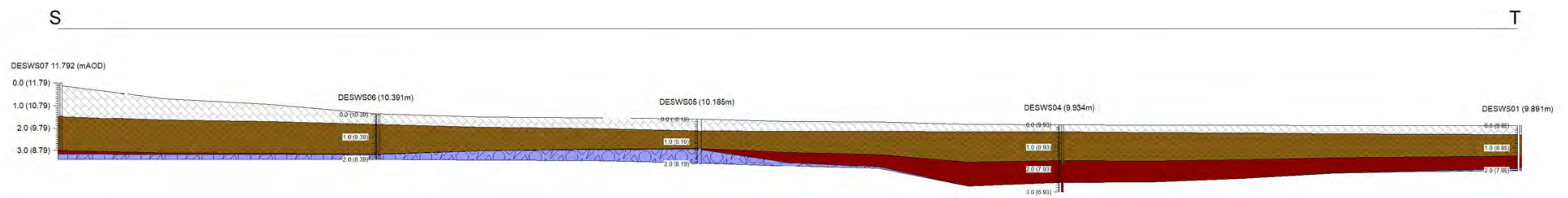
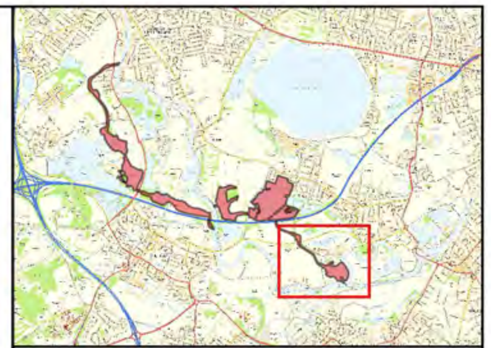
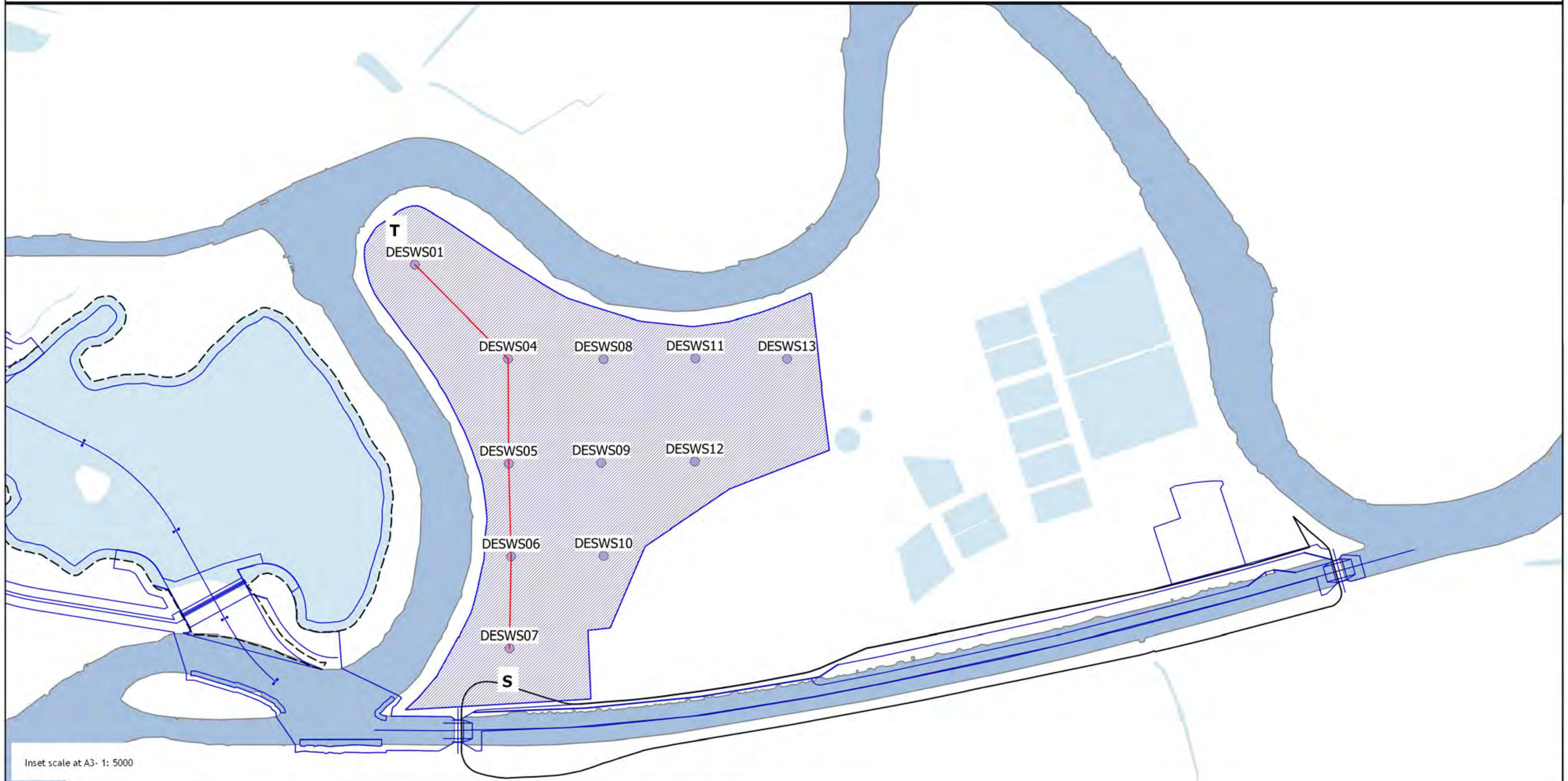


Figure 11.6 Archaeological Potential Zones at Desborough Island.
Scale at A4: 1:5000



Not to Scale





Inset scale at A3- 1: 5000

Key:

- Concept Design Channel Corridor
- Development Working Areas
- Possible Areas of Habitat Creation
- River Thames
- Surface Water
- Cross Section
- Indicative Bed Level (mAOD)
- Stage 1 - boreholes

Stratigraphy:

- Made Ground
- Alluvium (Minerogenic)
- Alluvium (Organic)
- Shepperton Gravel Member

N

Indicative bed levels provided by client.

0 50 100 150 200 m

Scale at A3- 1: 5000

Trent & Peak ARCHAEOLOGY

Figure 11.7 Transect Section S-T of RTS stage 1 boreholes- Channel Section 3 (Desborough)
Scale at A3: varies

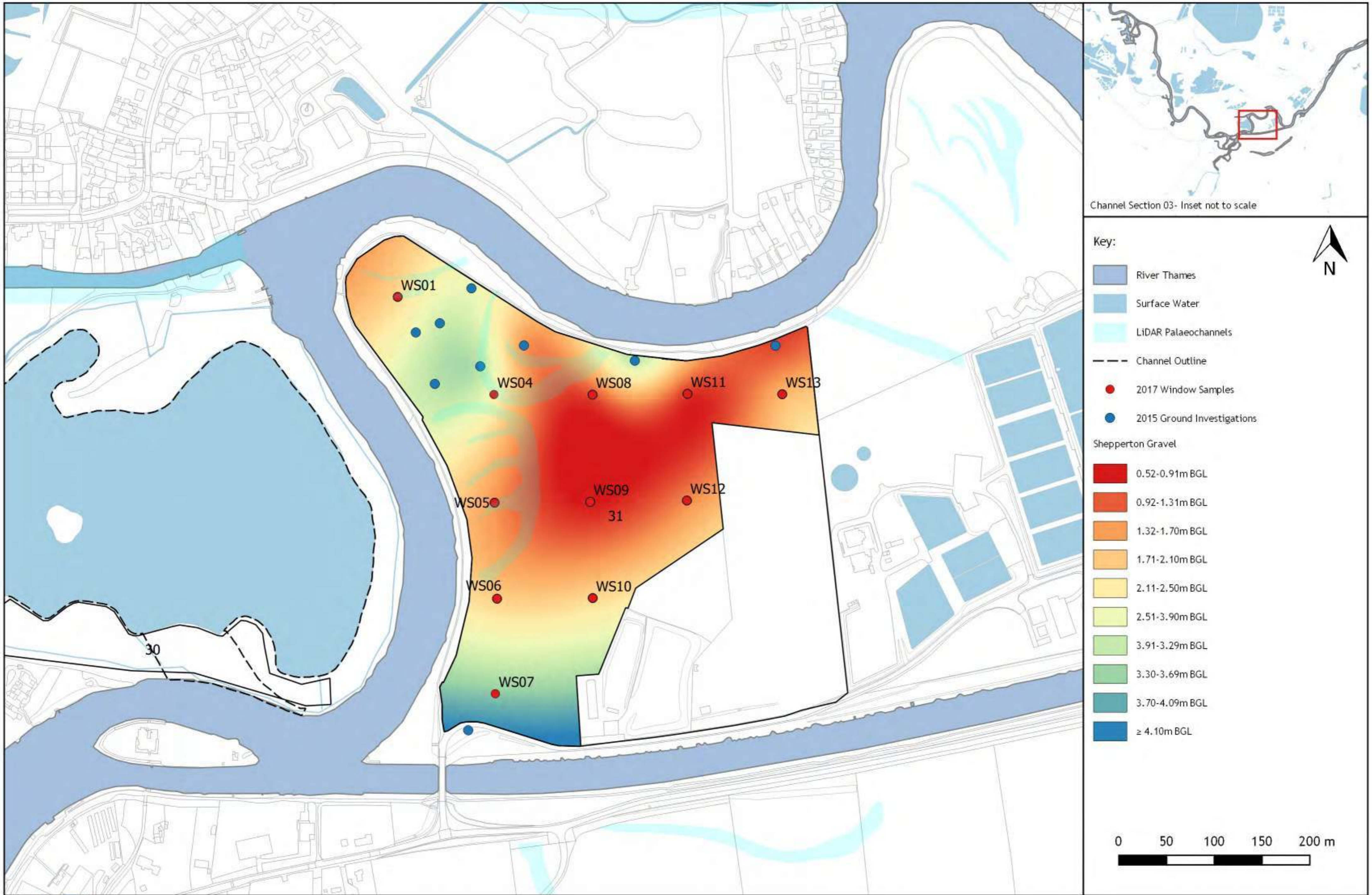


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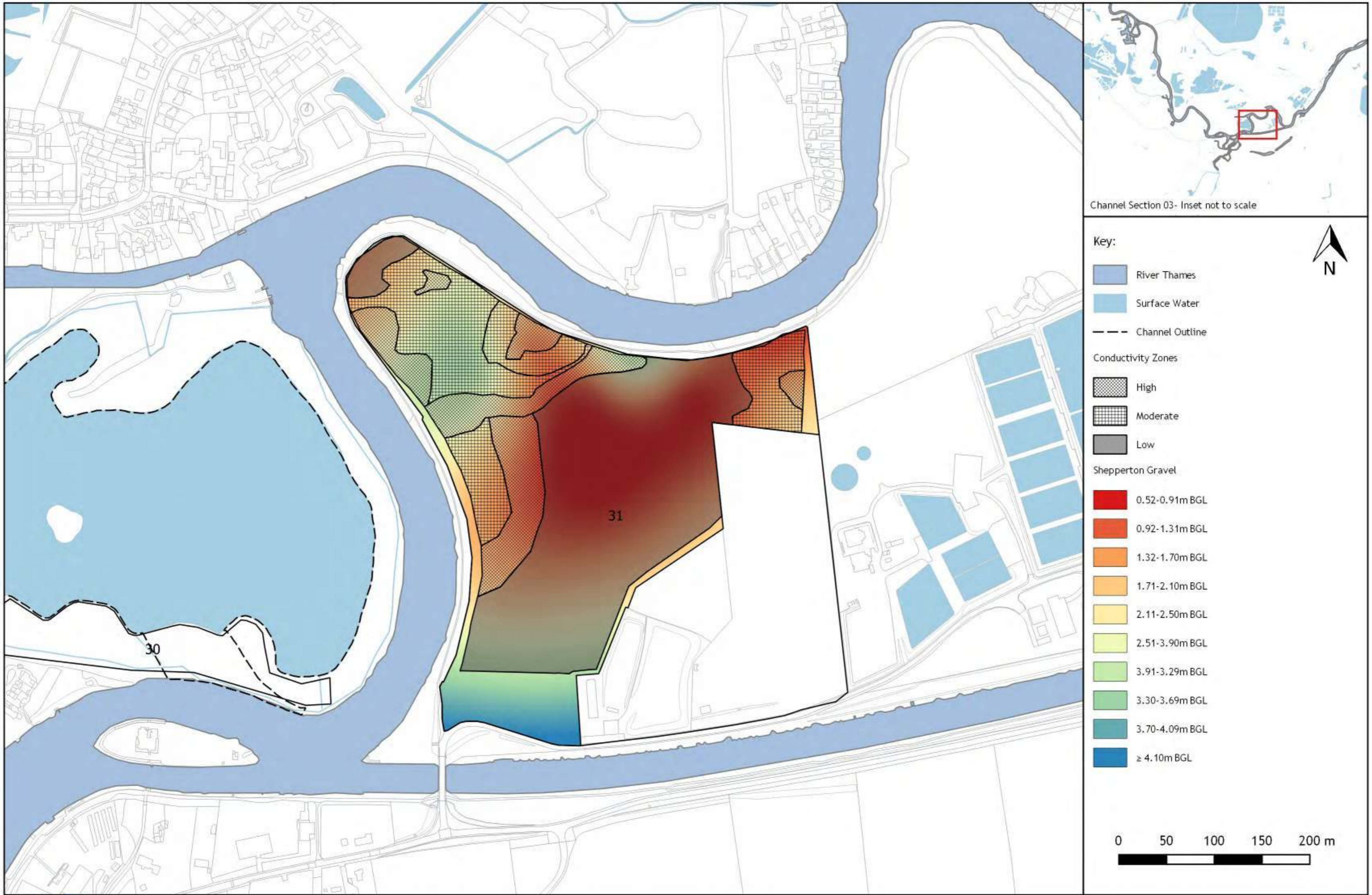
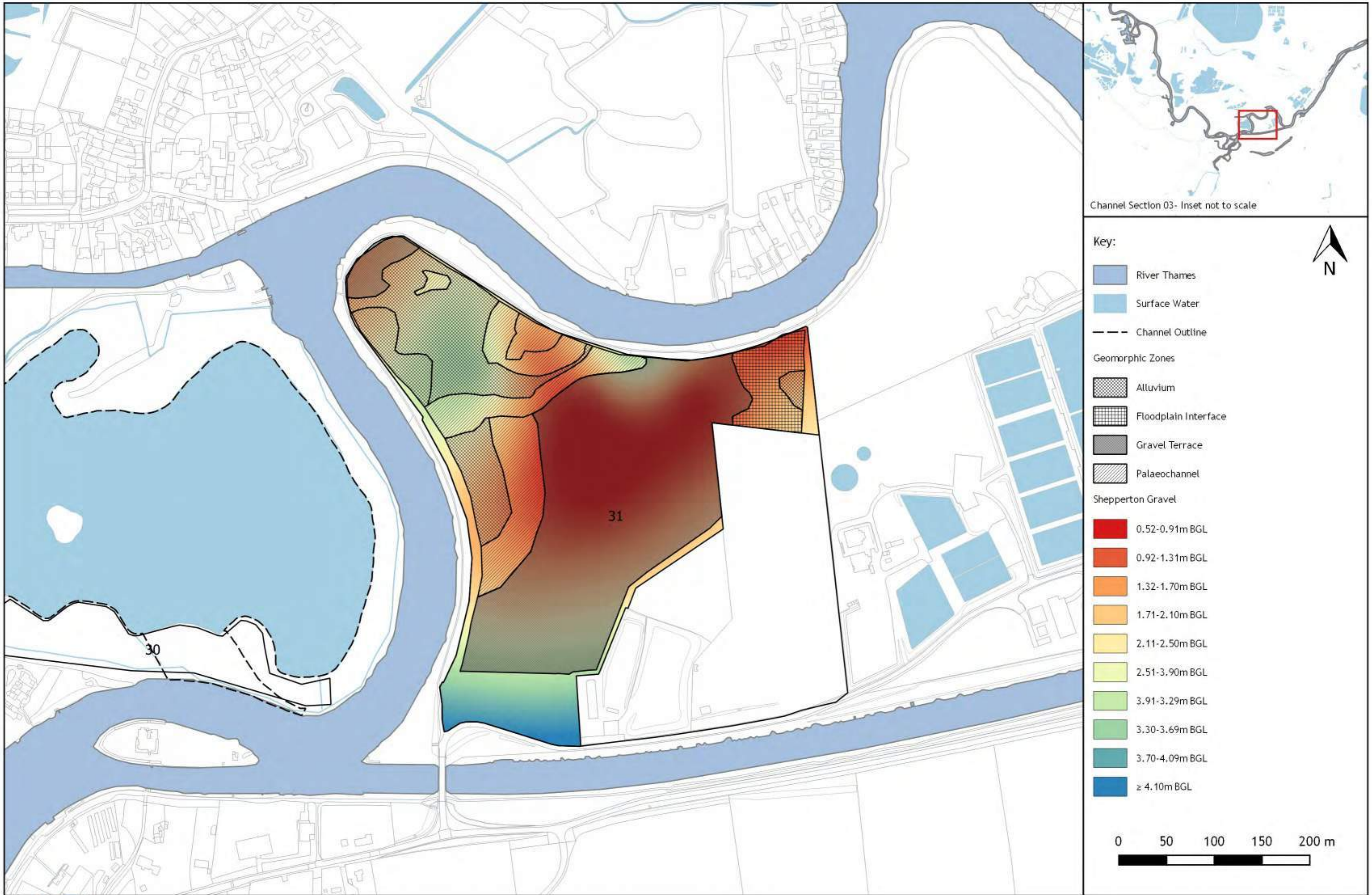
Figure 11.8 Depths of Shepperton Gravel at Desborough Island.
Scale at A4: 1:5000



Trent & Peak ARCHAEOLOGY

Figure 11.9 Depths of Shepperton Gravel and Conductivity Zones at Desborough Island.
Scale at A4: 1:5000



Trent & Peak ARCHAEOLOGY

Figure 11.10 Depths of Shepperton Gravel and Geomorphic Zones at Desborough Island.
Scale at A4: 1:5000

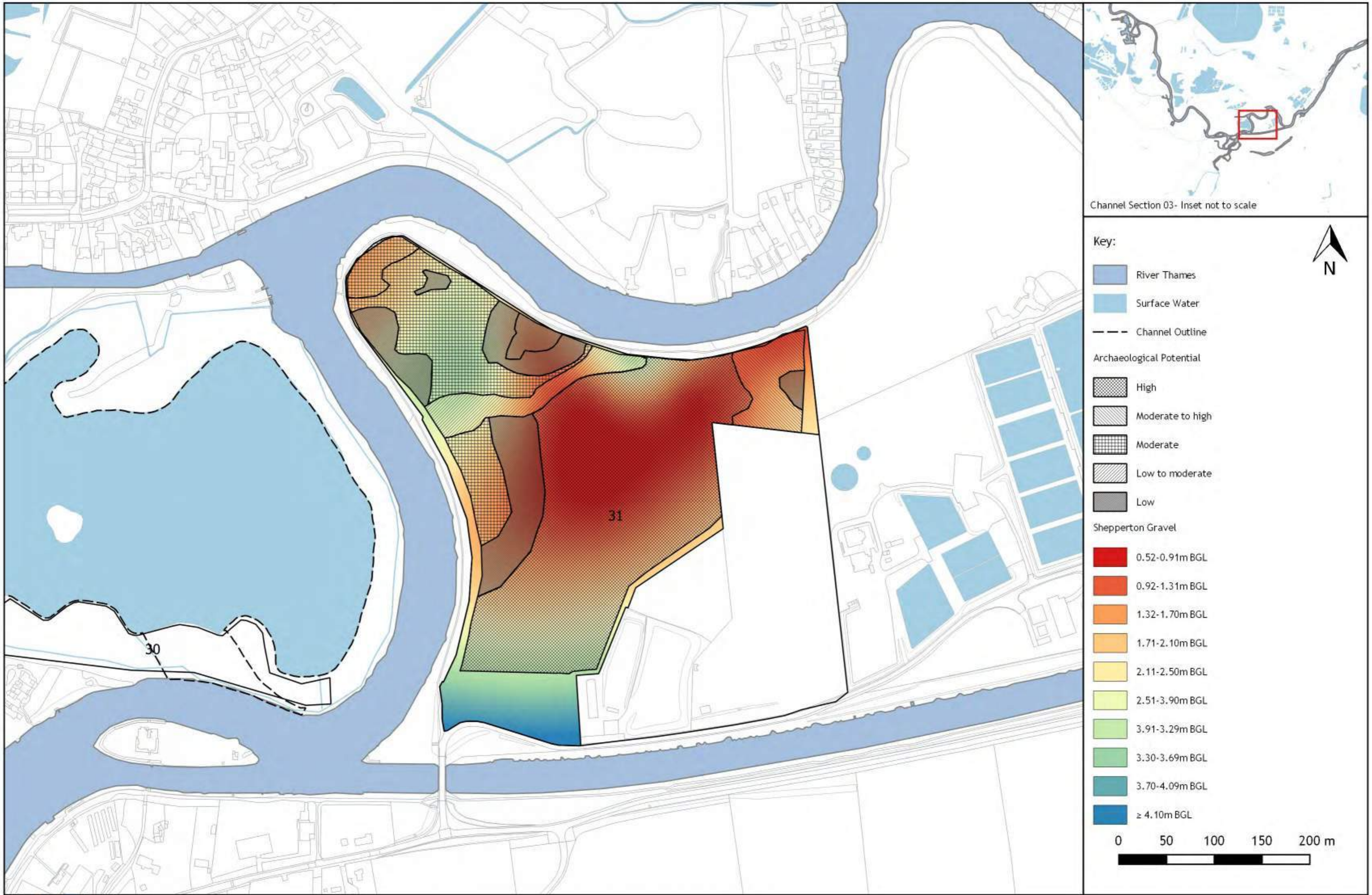


Figure 11.11 Depths of Shepperton Gravel and Archaeological Potential at Desborough Island.
Scale at A4: 1:5000

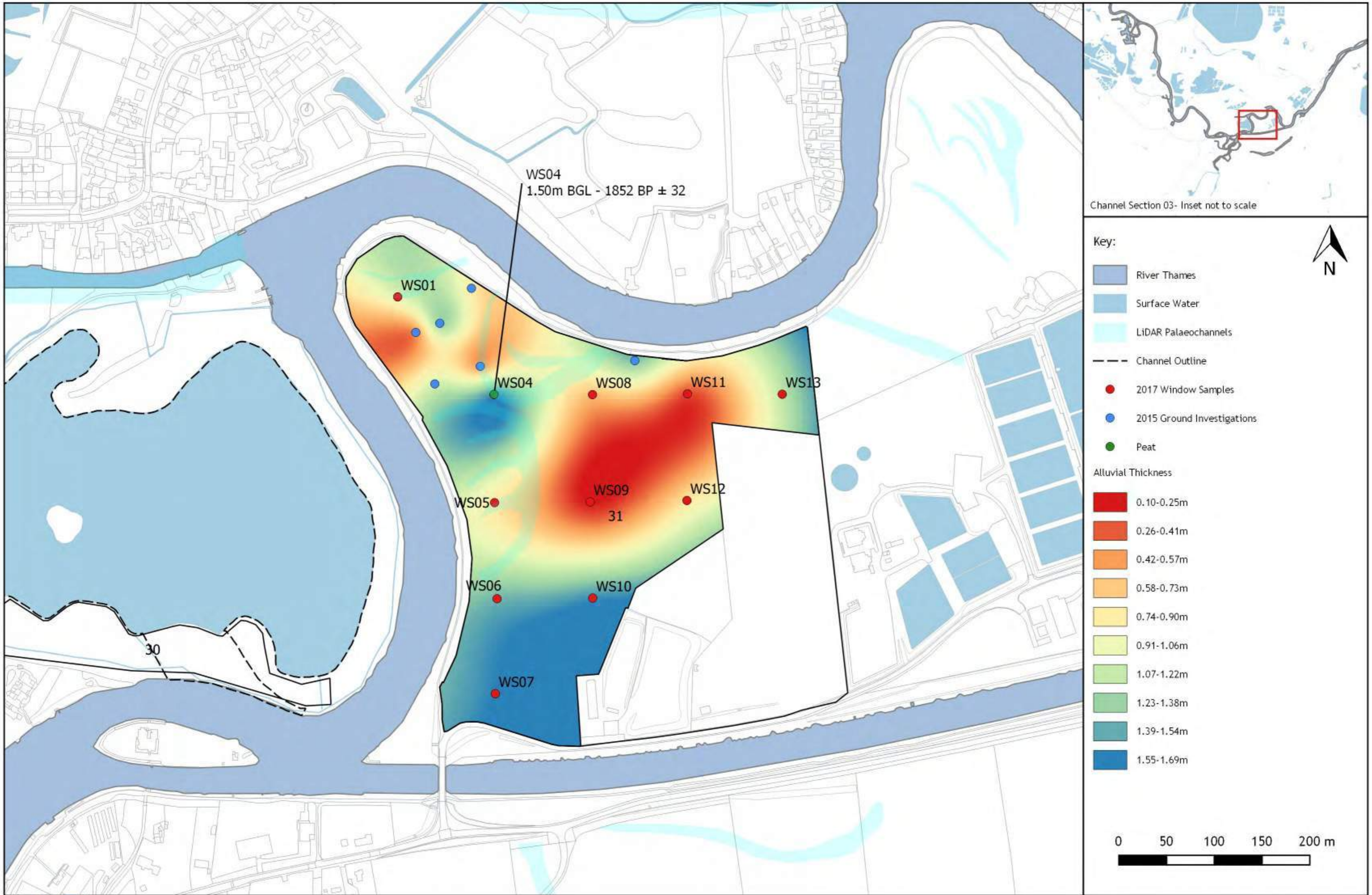


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Figure 11.12 Extent of Alluvium at Desborough Island.
Scale at A4: 1:5000

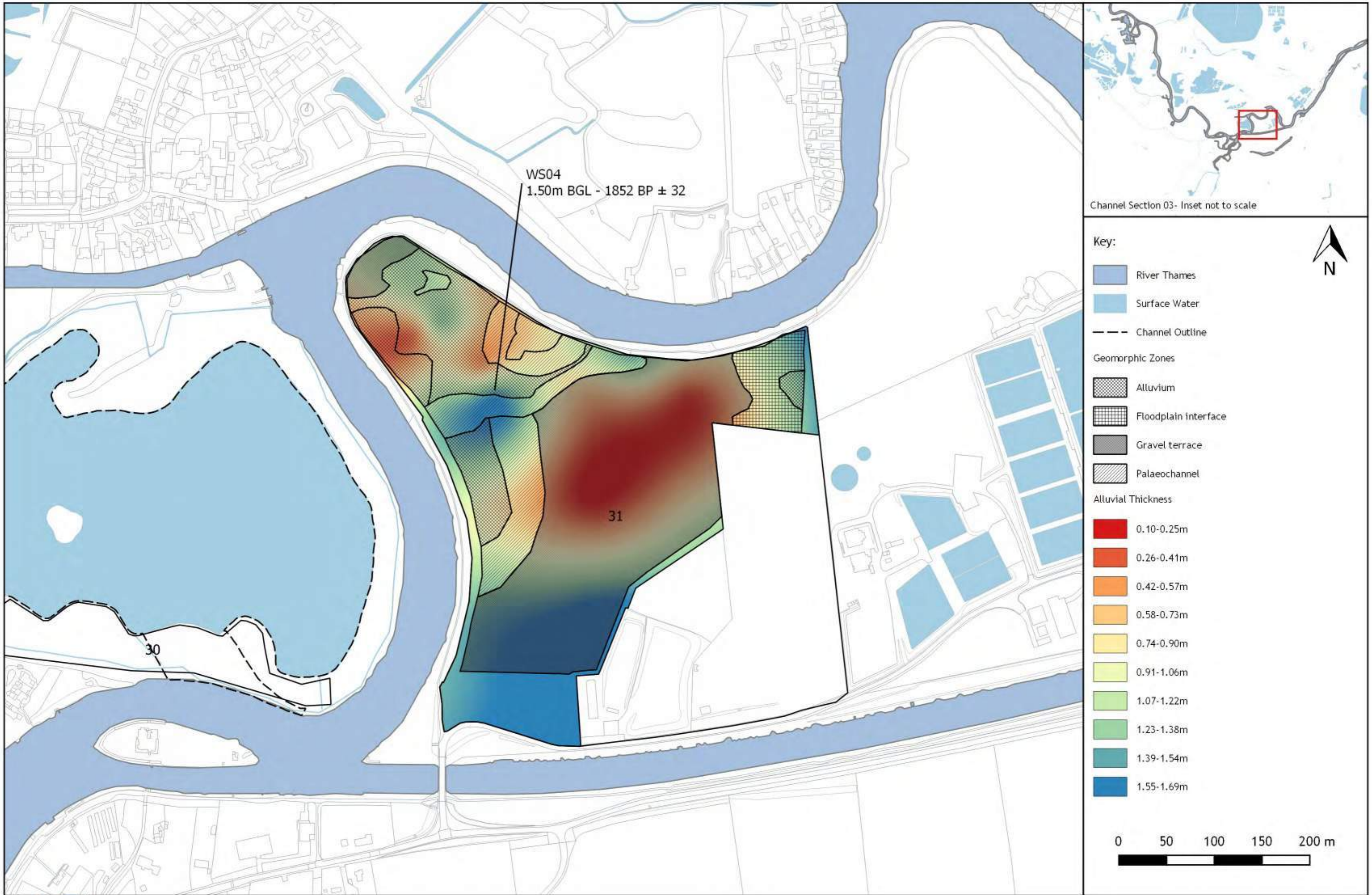

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Figure 11.13 Extent of Alluvium and Geomorphic Zones at Desborough Island.
Scale at A4: 1:5000

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15 Appendix 1: Finds Catalogues

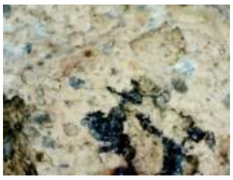
15.1 Catalogue of Shell from Datchet, Southlea Farm *Alison Wilson*

Field No.	Transect No.	Quantity	Find code	Shell type and description
9	T1	3	1.24, 1.27, 1.28	Oyster shell incomplete fragments
9	T3	1	3.43	Oyster shell incomplete fragment
9	T8	3	8.1, 8.24, 8.26	Oyster shell incomplete fragments
9	T11	2	11.3, 11.10	Oyster shell, one complete shell, one fragment
9	T13	2	13.14, 13.20	Oyster shell incomplete fragments
9	T15	1	15.8	Oyster shell incomplete fragment
9	T17	1	17.14	Oyster shell incomplete fragment
9	T18	2	18.29, 18.38	Oyster shell incomplete fragments
9	T19	1	19.30	Oyster shell incomplete fragment
10	T3	1	3.9	Oyster shell incomplete fragment
10	T4	3	4.1, 4.9, 4.24	Oyster shell incomplete fragments
10	T6	2	6.7, 6.9	Oyster shell incomplete fragments
10	T7	3	7.7, 7.8, 7.14	Oyster shell incomplete fragments One tiny periwinkle fragment
10	T8	1	8.6	Oyster shell incomplete fragments
10	T9	2	9.13, 9.16	Oyster shell incomplete fragments
11	T21	2	21.6, 21.7	Oyster shell incomplete fragments

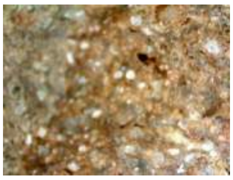
15.2 Ceramic Building Material from Datchet, Southlea Farm. Fabric Descriptions and Images *Phil Mills*

Fabric shots, all at x20 from a fresh break.





T11.31 TZ11.3 TZ11.31 TZ21.3
TZ21.31





TZ21.32 TZ21.33 TZ27.3 TZ50
TZ80

TZ121

T11.31

This is an oxidised fabric with red surfaces and margins. It is hard with a sandy feel and irregular fracture. It has inclusions of common fine sand and occasional rounded quartz at 0.3 mm.

TZ11.3
This is a red fabric with a pale reddish yellow core, with a sandy feel and irregular fracture. It has inclusions of common sub rounded quartz at 0.5 mm occasional black ironstone at 0.3mm and sub angular red inclusions at 0.3mm.

TZ11.31
This is a reddish yellow underfired fabric which is hard with a harsh feel and irregular fracture. It has inclusions of common sub angular quartz at 0.6mm and some iron stone at 0.5 mm

TZ21.3
This is a dark red fabric which is hard with a sandy feel and irregular fracture. It has inclusions of with common fine lime inclusions and occasional coarse lime inclusions up to 1mm and some fine sand.

TZ21.31
This is a red fabric which is hard with a powdery feel and a Fine fracture. It has inclusions of common rounded lime at 0.3 mm, moderate quartz and some fine silver mica.

TZ21.32
This is a very hard fabric with dark grey surfaces and dark brown core. It has a sandy feel and irregular fracture. It has inclusions of very common lime at 0.3mm with common rounded quartz at 0.2mm and common black iron stone at 0.4mm.

TZ21.33
This is a hard fabric with dark red surfaces and thick black core. It has an irregular fracture and harsh sandy feel. It has inclusions of common rounded lime at 0.2mm with some quart and some black iron stone.

TZ27.3
This is a pale brown hard fabric with a powdery feel and fine fracture. It has inclusions of some shell in a clean matrix.

TZ50
This is a reduced black hard fabric with a clean feel and fine to conchoidal fracture It has inclusions of some fine quartz.

TZ80
This is a yellow fire clay fabric with inclusions of common lime at 0.5mm and some coal. both surfaces covered in thick brown glaze.

TZ121
This is a hard-fired deep red fabric with possible outer slip, It is very hard with a sandy feel and irregular fracture, It has inclusions of abundant quartz at 0.1mm and some fine lime.

15.3 Catalogue of Clay Pipes from Datchet, Southlea Farm *Alison Wilson*

Field	Transect	Find code	Count	Weight (g)	Stem bore range	Description	Date range
9	T15	15.2	1	3	2mm	Unmarked partial stem	18th - 19th

		6					century
9	T11	11.2 3	1	1	1.5mm	Unmarked partial stem	18th - 19th century
9	T10	10.8	1	1	1.5mm	Unmarked partial stem	18th - 19th century
9	T12	12.1 4	1	6	3mm	Unmarked partial stem	17th century
9	T6	6.15	1	1	2mm	Unmarked partial stem	18th - 19th century
9	T6	6.15	1	2	1.5mm	Unmarked partial stem	18th - 19th century
9	T4	4.28	1	1	2mm	Unmarked partial stem	18th - 19th century
9	T2	2.39	1	1	1.5mm	Unmarked partial stem	18th - 19th century
9	T7	7.11	1	2	1.5mm	Unmarked partial stem	18th - 19th century
9	T9	9.9	1	1	1.5mm	Unmarked partial stem	18th - 19th century
9	T15	15.6	1	1	1.5mm	Unmarked partial stem	18th - 19th century
9	T7	7.10	1	2	2mm	Unmarked partial stem	18th - 19th century
9	T8	8.27	1	3	1.5mm	Unmarked partial stem	18th - 19th century
9	T8	8.8	1	1	1.5mm	Unmarked partial stem	18th - 19th century
9	T4	4.29	1	3	2mm	Unmarked partial stem	18th - 19th century
9	T19	19.1 4	1	1	3mm	Unmarked partial stem	17th century
9	T1	1.8	1	2	1.5m	Unmarked partial stem	18th - 19th century
9	T19	19.5	1	2	1.5mm	Partial stem, lettering NORWOOD	18th - 19th century
9	T2	2.38	1	3	3mm	Unmarked partial stem	17th century
9	T14	14.2 8	1	3	1.5mm	Unmarked partial stem	18th - 19th century
9	T6	6.19	1	1	1.5mm	Unmarked partial stem	18th - 19th century
9	T2	2.29	1	2	1.5mm	Unmarked partial stem	18th - 19th century
9	T4	4.17	1	6	3mm	Partial stem and bowl with flat heel	17th century
9	T12	12.2 2	1	1	1.5mm	Unmarked partial stem	18th - 19th century
9	T12	12.1 7	1	2	1.5mm	Unmarked partial stem	18th - 19th century
9	T3	T3.1 2	1	2	1.5mm	Partial stem, trace of leaf seam decoration	18th - 19th century
9	T11	11.4 6	1	1	1.5mm	Unmarked partial stem	18th - 19th century
9	T15	15.2 2	2	3	2mm	Unmarked partial stem	18th - 19th century
9	T11	11.2 1	1	3	2mm	Unmarked partial stem	18th - 19th century
9	T16	16.2 7	1	2	1.5mm	Unmarked partial stem	18th - 19th century
10	T3	3.8	1	2	1.5mm	Unmarked partial stem	18th - 19th

							century
10	T9	9.10	1	2	2mm	Unmarked partial stem	18th - 19th century
10	T2	2.5	1	1	1.5mm	Unmarked partial stem	18th - 19th century
10	T4	4.21	1	2	2mm	Unmarked partial stem	18th - 19th century
10	T10	10.7	1	2	2mm	Unmarked partial stem	18th - 19th century
10	T4	4.4	1	1	N/A	Bowl fragment, cut rim, fluted decoration	18th - 19th century
11	T29	29.1	1	2	1.5mm	Unmarked partial stem	18th - 19th century
11	T17	17.1	1	5	2mm	Unmarked partial stem	18th - 19th century
11	T16	16.3	1	2	1.5mm	Unmarked partial stem	18th - 19th century
11	T8	8.3	1	1	1.5mm	Unmarked partial stem	18th - 19th century
11	T19	19.5	1	2	2mm	Unmarked partial stem	18th - 19th century
11	T12	12.1	1	3	1.5mm	Unmarked partial stem	18th - 19th century
11	T5	5.1	1	1	1.5mm	Unmarked partial stem	18th - 19th century
11	T11	11.2	1	1	1.5mm	Unmarked partial stem	18th - 19th century
11	T22	22.1	1	2	2mm	Unmarked partial stem	18th - 19th century
11	T10	10.1	1	1	2mm	Unmarked partial stem	18th - 19th century
11	T10	10.2	1	2	1.5mm	Unmarked partial stem	18th - 19th century
11	T3	3.5	1	1	1.5mm	Unmarked partial stem	18th - 19th century
11	T3	3.1	1	1	1.5mm	Unmarked partial stem	18th - 19th century
11	T3	3.2	1	1	1.5mm	Unmarked partial stem	18th - 19th century
11	T35	35.3	1	3	1.5mm	Unmarked partial stem with spur	18th - 19th century

15.4 Catalogue of Pottery from Datchet, Southlea Farm, showing Occurrence by Field, Transect and Fabric Type *Paul Blinkhorn*

Field No	Transect	Find Code	Fabric	Period	Weight(g)
F9	T1	1.6	HORT	MOD	9
F9	T1	1.20	REFW	MOD	36
F9	T1	1.21	PMR	P/M	1
F9	T1	1.23	HORT	MOD	10
F9	T1	1.31	RB	RB	1
F9	T2	2.14	FREC	P/M	9
F9	T2	2.20	LMSR	Med	4
F9	T2	2.22	ENGS	P/M	10
F9	T2	2.24	ENGS	MOD	25

Field No	Transect	Find Code	Fabric	Period	Weight(g)
F9	T2	2.25	TPW	MOD	14
F9	T2	2.26	ENGS	P/M	30
F9	T2	2.30	PMR	P/M	41
F9	T2	2.35	PMR	P/M	3
F9	T2	2.37	KING	Med	4
F9	T2	2.42	PMR	P/M	5
F9	T2	2.44	RB	RB	27
F9	T2	2.46	ENGS	MOD	6
F9	T2	2.46	PMR	P/M	1
F9	T2	2.48	PMR	P/M	29
F9	T2	2.50	REFW	MOD	7
F9	T2	2.52	ESUR	Med	3
F9	T2	2.53	CBW	Med	3
F9	T2	2.54	LMSR	Med	35
F9	T2	2.55	HORT	MOD	6
F9	T2	2.56	PMR	P/M	3
F9	T2	2.59	ENGS	MOD	7
F9	T2	2.60	REFW	MOD	3
F9	T2	2.63	PMR	P/M	1
F9	T3	3.2	PMR	P/M	118
F9	T3	3.5	RB	RB	40
F9	T3	3.11	TPW	MOD	6
F9	T3	3.20	PMR	P/M	1
F9	T3	3.21	ENGS	MOD	22
F9	T3	3.33	EMIS	Med	1
F9	T4	4.15	RB	RB	23
F9	T4	4.16	MPUR	P/M	59
F9	T4	4.18	HORT	MOD	16
F9	T4	4.25	PMR	P/M	12
F9	T4	4.26	RB	RB	2
F9	T4	4.27	EMIS	Med	10
F9	T4	4.33	TPW	MOD	8
F9	T5	5.6	BLUE	MOD	18
F9	T5	5.10	ENGS	MOD	13
F9	T5	5.15	ENGS	MOD	132
F9	T5	5.17	HORT	MOD	4
F9	T5	5.19	ENGS	P/M	10
F9	T4	5.20	PMR	P/M	13
F9	T5	5.24	ENGS	MOD	30
F9	T5	5.25	REFW	MOD	7
F9	T5	5.27	ENGS	MOD	53
F9	T6	6.11	PMBL	P/M	3
F9	T6	6.17	ESUR	Med	27
F9	T6	6.18	RAER	Med	20
F9	T6	6.21	ENGS	MOD	1
F9	T6	6.22	ENGS	MOD	45
F9	T6	6.28	ENPO	MOD	39
F9	T6	6.32	ENGS	MOD	2
F9	T6	6.34	ENGS	MOD	27
F9	T6	6.36	SWSG	P/M	15
F9	T6	6.37	ENGS	MOD	17

Field No	Transect	Find Code	Fabric	Period	Weight(g)
F9	T6	6.40	REFW	MOD	1
F9	T6	6.41	TPW	MOD	6
F9	T6	6.42	ENGS	MOD	26
F9	T6	6.43	ENGS	MOD	18
F9	T6	6.48	ENGS	MOD	8
F9	T7	7.2	PMR	P/M	11
F9	T7	7.8	LBA	Pre	4
F9	T7	7.9	LBA	Pre	8
F9	T7	7.12	ENGS	P/M	6
F9	T7	7.13	ENGS	MOD	6
F9	T7	7.14	ENGS	MOD	12
F9	T8	8.5	LBA	Pre	8
F9	T8	8.10	LBA	Pre	59
F9	T8	8.18	ENGS	P/M	26
F9	T8	8.19	ENGS	MOD	35
F9	T8	8.22	LMSR	Med	3
F9	T8	8.23	ENGS	MOD	6
F9	T8	8.25	ENGS	P/M	19
F9	T8	8.29	RB	RB	15
F9	T8	8.30	LMSR	Med	7
F9	T9	9.1	LMSR	Med	3
F9	T9	9.2	CBW	Med	3
F9	T9	9.3	CBW	Med	13
F9	T9	9.19	STMO	P/M	5
F9	T9	9.24	ENGS	P/M	14
F9	T9	9.28	HORT	MOD	10
F9	T9	9.29	HORT	MOD	34
F9	T9	9.32	ESUR	Med	64
F9	T9	9.38	PMR	P/M	27
F9	T10	10.2	ESUR	Med	19
F9	T10	10.3	ENGS	MOD	15
F9	T10	10.3	LBA	Pre	3
F9	T10	10.5	HORT	MOD	24
F9	T10	10.6	ESUR	Med	5
F9	T10	10.9	PMR	P/M	1
F9	T10	10.10	ENGS	MOD	102
F9	T10	10.11	ENGS	MOD	4
F9	T10	10.17	LBA	Pre	42
F9	T10	10.22	ENGS	MOD	24
F9	T10	10.29	PMR	P/M	6
F9	T10	10.32	DERBS	MOD	20
F9	T10	10.37	ENGS	MOD	6
F9	T10	10.41	ENGS	MOD	39
F9	T10	10.42	ENGS	MOD	11
F9	T10	10.44	RB	RB	8
F9	T10	10.46	HORT	MOD	29
F9	T10	10.46	RB	RB	29
F9	T11	11.4	ENGS	MOD	17
F9	T11	11.6	LBA	Pre	8
F9	T11	11.7	RB	RB	5
F9	T11	11.8	ENGS	MOD	19

Field No	Transect	Find Code	Fabric	Period	Weight(g)
F9	T11	11.15	EMSH	Med	13
F9	T11	11.22	ESUR	Med	3
F9	T11	11.28	ENGS	MOD	35
F9	T11	11.35	ENGS	MOD	1
F9	T11	11.40	PMR	P/M	2
F9	T11	11.41	REFW	MOD	2
F9	T11	11.42	ENGS	MOD	2
F9	T12	12.2	BORDG	P/M	9
F9	T12	12.7	REFW	MOD	3
F9	T12	12.10	PMBL	P/M	6
F9	T12	12.12	ENGS	MOD	8
F9	T13	12.13	LBA	Pre	16
F9	T12	12.26	HORT	MOD	22
F9	T12	12.37	ENGS	MOD	26
F9	T12	12.27	FREC	P/M	23
F9	T12	12.28	PMR	P/M	7
F9	T12	12.30	ENGS	MOD	25
F9	T12	12.35	ENGS	MOD	5
F9	T12	12.40	PMR	P/M	31
F9	T12	12.42	PMR	P/M	18
F9	T12	12.45	ENGS	MOD	3
F9	T12	12.48	ENGS	MOD	2
F9	T12	12.50	CBW	Med	1
F9	T12	12.52	PMR	P/M	10
F9	T13	13.2	LBA	Pre	5
F9	T13	13.9	ENGS	MOD	15
F9	T13	13.17	ENGS	MOD	2
F9	T13	13.18	RB	RB	7
F9	T13	13.19	ENGS	MOD	4
F9	T13	13.22	CBW	Med	158
F9	T13	13.24	HORT	MOD	52
F9	T13	13.26	LBA	Pre	15
F9	T13	13.29	REFW	MOD	29
F9	T14	14.2	LBA	Pre	35
F9	T14	14.9	LBA	Pre	103
F9	T14	14.10	ENGS	MOD	6
F9	T14	14.11	ENGS	MOD	7
F9	T14	14.15	EMIS	Med	8
F9	T14	14.29	LBA	Pre	2
F9	T15	15.2	PMBL	P/M	38
F9	T15	15.15	ENGS	MOD	11
F9	T15	15.20	ENGS	MOD	5
F9	T15	15.25	LBA	Pre	11
F9	T16	16.5	LBA	Pre	9
F9	T16	16.5	LBA	Pre	4
F9	T16	16.5	RB	RB	2
F9	T16	16.8	ENGS	MOD	8
F9	T16	16.9	ENGS	MOD	1
F9	T16	16.12	ENGS	MOD	16
F9	T16	16.21	PMR	P/M	2
F9	T16	16.26	ENGS	MOD	16

Field No	Transect	Find Code	Fabric	Period	Weight(g)
F9	T16	16.28	ENGS	MOD	88
F9	T16	16.29	ENGS	MOD	24
F9	T17	17.3	RB	RB	36
F9	T17	17.4	LBA	Pre	12
F9	T17	17.4	RB	RB	3
F9	T17	17.5	ENGS	MOD	27
F9	T17	17.7	PMR	P/M	70
F9	T17	17.8	REFW	MOD	11
F9	T17	17.10	ENGS	MOD	7
F9	T17	17.12	ENGS	P/M?	15
F9	T17	17.13	ENGS	MOD	3
F9	T17	17.16	PMR	P/M	1
F9	T17	17.17	ENGS	MOD	4
F9	T17	17.18	ENGS	MOD	28
F9	T17	17.24	RB	RB	10
F9	T18	18.13	ENGS	MOD	1
F9	T18	18.15	ENGS	MOD	4
F9	T18	18.25	RB	RB	51
F9	T18	18.31	ENGS	MOD	8
F9	T18	18.33	RB	RB	4
F9	T18	18.35	ENGS	MOD	1
F9	T19	19.3	ENGS	MOD	4
F9	T19	19.8	PMR	P/M	22
F9	T19	19.16	RB	RB	11
F9	T19	19.18	ENGS	MOD	15
F9	T19	19.27	RB	RB	12
F10	T1	1.8	RB	RB	4
F10	T1	1.10	REFW	MOD	32
F10	T2	2.2	PMR	P/M	11
F10	T3	3.2	Clay Pigeon	MOD	80
F10	T3	3.5	SSW	Med	2
F10	T3	3.7	PMR	P/M	10
F10	T3	3.11	PMR	P/M	15
F10	T3	3.12	PMR	P/M	31
F10	T3	3.13	PMR	P/M	10
F10	T4	4.26	ENGS	MOD	47
F10	T5	5.2	LBA?	Pre?	142
F10	T5	5.6	PMR	P/M	200
F10	T5	5.7	PMR	P/M	15
F10	T5	5.8	RB	RB	1
F10	T5	5.9	CBW	Med	133
F10	T6	6.2	RB	RB	52
F10	T6	6.8	HORT	MOD	209
F10	T6	6.11	TPW	MOD	4
F10	T6	6.12	HORT	MOD	6
F10	T7	7.2	PMR	P/M	14
F10	T7	7.5	LBA	Pre	7
F10	T7	7.15	HORT	MOD	4
F10	T7	7.17	LBA	Pre	4
F10	T7	7.22	LBA	Pre	4
F10	T8	8.3	PMR	P/M	6

Field No	Transect	Find Code	Fabric	Period	Weight(g)
F10	T8	8.12	ENGS	MOD	48
F10	T9	9.1	DERBS	MOD	8
F10	T9	9.2	ENGS	MOD	48
F10	T9	9.3	ENGS	MOD	24
F10	T9	9.7	PMR	P/M	23
F10	T10	10.5	RB	RB	5
F10	T10	10.6	HORT	MOD	5
F10	T11	11.1	RB	RB	13
F10	T11	11.3	PMR	P/M	60
F10	T11	11.4	LBA	Pre	22
F10	T12	12.1	PMR	P/M	3
F10	T12	12.3	ENGS	P/M	4
F10	T12	12.4	REFW	MOD	2
F11	T1	1.8	PMR	P/M	41
F11	T1	1.10	PMR	P/M	14
F11	T1	1.11	RB	RB	45
F11	T1	1.12	TPW	MOD	6
F11	T2	2.1	PMR	P/M	11
F11	T2	2.3	KING	Med	2
F11	T2	2.11	PMR	P/M	13
F11	T3	3.4	PMR	P/M	5
F11	T6	6.3	TPW	MOD	12
F11	T6	6.5	PMR	P/M	8
F11	T7	7.3	PMBL	P/M	9
F11	T8	8.1	HORT	MOD	9
F11	T8	8.2	PMR	P/M	4
F11	T9	9.1	ENGS	MOD	54
F11	T9	9.2	BORDY	P/M	2
F11	T9	9.3	RB	RB	1
F11	T9	9.4	PMR	P/M	1
F11	T11	11.1	PMR	P/M	10
F11	T11	11.4	ENGS	MOD	1
F11	T11	11.5	PMR	P/M	1
F11	T11	11.6	TPW	MOD	8
F11	T12	12.2	PMR	P/M	56
F11	T14	14.1	PMR	P/M	65
F11	T14	14.3	ENGS	MOD	85
F11	T15	15.1	TPW	MOD	4
F11	T16	16.1	PMRSLIP	MOD	1
F11	T18	18.1	ENGS	MOD	16
F11	T19	19.1	PMR	P/M	39
F11	T19	19.2	HORT	MOD	23
F11	T19	19.3	KING	Med	12
F11	T19	19.4	ENGS	MOD	29
F11	T20	20.1	REFW	MOD	23
F11	T21	21.1	PMR	P/M	2
F11	T21	21.5	TPW	MOD	21
F11	T22	22.2	MIA	Pre	43
F11	T22	22.3	LBA	Pre	9
F11	T23	23.2	RB	RB	16
F11	T23	23.4	PMR	P/M	35

Field No	Transect	Find Code	Fabric	Period	Weight(g)
F11	T23	23.5	RB	RB	3
F11	T25	25.2	HORT	MOD	5
F11	T25	25.5	LBA	Pre	23
F11	T25	25.6	RB	RB	48
F11	T25	25.7	RB	RB?	11
F11	T25	25.8	HORT	MOD	48
F11	T25	25.9	RB	RB?	5
F11	T26	26.2	LPRIA	LPRIA	81
F11	T26	26.3	RB	RB	20
F11	T27	27.2	ENGS	MOD	72
F11	T27	27.3	RB	RB	96
F11	T27	27.4	REFW	MOD	42
F11	T28	28.2	PMR	P/M	61
F11	T29	29.2	TPW	MOD	28
F11	T29	29.3	RB	RB	7
F11	T29	29.5	ENGS	P/M	1
F11	T29	29.7	DERBS	MOD	4
F11	T29	29.8	PMR	P/M	42
F11	T30	30.2	RB	RB	8
F11	T31	31.4	TPW	MOD	1
F11	T33	33.1	TPW	MOD	9
F11	T33	33.2	ENGS	P/M	11
F11	T34	34.4	ENGS	MOD	21
F11	T34	34.5	TPW	MOD	9
F11	T34	34.8	PMR	P/M	20
F11	T35	35.4	PMR	P/M	23
F11	T36	36.2	PMR	P/M	10
F11	T37	37.2	ENGS	MOD	42
F11	T38	38.1	ENGS	MOD	1
F11	T38	38.4	ENGS	MOD	63

15.5 Catalogue of Lithics from Datchet, Southlea Farm *Peter Webb*

Finds Code	Material	Source	Colour	Flake type	Max length (mm)	Max width (mm)	Max thickness (mm)	Weight (g)	Complete	Stage	Piece type	Burnt
DAT 9												
F1.22	Flint	Gravel	Light olive grey	Tertiary	64.0	21.4	5.8	8.3	Medial	Utilised tool	Utilised blade - knife?	N
F1.26	Flint	Gravel	Moderate yellowish brown	Non-cortical	10.9	16.0	3.9	0.8	Y	Debitage	Flake	N
F2.1(1)	Flint	Nodule	Olive black	Tertiary	26.8	22.3	7.9	4.4	Proximal	Retouched tool	Retouched flake	N
F2.1(2)	Flint	Unclear	Dark grey	Non-cortical	28.8	24.0	20.0	17.6	Y	Debitage	Shatter fragment	Y
F2.1(3)	Flint	Gravel	Dark grey	Secondary	36.7	24.4	8.2	9.4	Y	Natural	Thermal shatter fragment	N
F2.2	Flint	Unclear	Dark grey	Non-cortical	6.0	15.5	3.6	0.4	Distal	Debitage	Chip	N
F2.15(1)	Flint	Unclear	Olive grey	Non-cortical	17.7	11.0	4.1	0.7	Y	Debitage	Flake	N
F2.15(2)	Flint	Unclear	Pale yellowish brown	Non-cortical	17.9	8.2	3.1	0.4	Medial	Debitage	Flake	N
F2.17	Flint	Unclear	Greyish black	Non-cortical	14.5	14.9	3.3	1.0	Distal	Retouched tool	Retouched flake	N
F2.21	Flint	Nodule?	Brownish grey	Tertiary	39.8	28.2	11.4	15.1	Proximal	Debitage	Flake	N
F2.27	Flint	Nodule	Greyish black	Tertiary	51.8	39.1	23.9	37.8	Y	Objective piece	Core - Class B3 blade & flake	N
F2.31	Flint	Gravel?	Dark grey	Non-cortical	25.6	14.5	6.8	2.8	Medial	Retouched tool	Retouched flake	N
F2.33	Flint	Gravel?	Light brownish grey	Non-cortical	18.2	14.9	3.5	0.9	Proximal	Debitage	Blade fragment	N
F2.40	Flint	Gravel?	Dark yellowish brown	Non-cortical	15.6	23.9	5.3	1.6	Medial	Debitage	Flake	N
F2.43	Chert	Gravel	Dark yellowish orange	Non-cortical	30.8	19.8	6.7	4.3	Y	Debitage	Flake	N
F2.45	Flint	Unclear	Dark yellowish brown	Non-cortical	27.9	35.5	7.4	7.5	Y	Retouched tool	Notched flake	N
F2.51	Flint	Nodule?	Greyish black	Non-cortical	30.8	25.9	7.9	5.7	Axial	Retouched tool	Piercer	N

Finds Code	Material	Source	Colour	Flake type	Max length (mm)	Max width (mm)	Max thickness (mm)	Weight (g)	Complete	Stage	Piece type	Burnt
F2.61	Flint	Nodule	Greyish black	Tertiary	43.6	34.0	7.9	14.0	Y	Debitage	Flake	N
F3.3	Flint	Nodule?	Moderate yellowish brown	Tertiary	21.0	17.6	3.4	1.6	Proximal	Debitage	Flake	N
F3.6	Flint	Nodule?	Greyish black	Tertiary	21.4	12.9	5.1	1.5	Distal	Retouched tool	Backed blade	N
F3.7	Flint	Unclear	Brownish grey	Non-cortical	13.9	6.9	3.3	0.1	Distal	Utilised tool	Utilised flake	N
F3.18	Flint	Unclear	Olive black	Non-cortical	17.4	26.5	5.6	2.3	Y	Retouched tool	Notched flake	N
F3.22	Flint	Unclear	Brownish black	Non-cortical	19.1	17.9	4.5	1.2	Y	Debitage	Flake	N
F3.24	Flint	Nodule	Dark yellowish brown	Tertiary	12.6	13.8	5.2	0.7	Y	Debitage	Flake	N
F3.26	Flint	Nodule	Brownish grey	Tertiary	42.0	26.5	10.4	9.8	Y	Retouched tool	Notched flake	N
F3.28	Flint	Unclear	Greyish black	Tertiary	42.0	15.3	6.6	6.7	Y	Retouched tool	Backed blade	N
F3.30	Flint	Gravel	Black	Secondary	23.5	18.9	7.7	3.0	Proximal	Debitage	Flake	N
F3.35	Flint	Gravel?	Dark yellowish brown	Non-cortical	21.7	13.6	3.5	1.5	Distal	Retouched tool	Denticulate?	N
F3.41	Flint	Gravel?	Greyish black	Tertiary	16.9	25.0	5.2	2.1	Y	Utilised tool	Utilised flake	N
F4.2	Flint	Nodule?	Dark yellowish brown	Non-cortical	16.3	10.3	3.3	0.7	Y	Retouched tool	Edge retouched flake	N
F4.13	Flint	Nodule?	Olive grey	Non-cortical	19.6	12.1	2.8	1.2	Medial	Debitage	Flake	N
F4.23	Flint	Nodule	Olive black	Tertiary	28.1	38.5	34.0	38.5	Y	Objective piece	Core - Class D keeled	N
F4.24	Flint	Nodule?	Olive black	Tertiary	17.9	26.2	4.7	2.5	Y	Retouched tool	Notched flake	N
F4.31	Flint	Nodule?	Olive black	Non-cortical	35.7	22.4	6.6	4.9	Y	Retouched tool	Notched flake	N
F4.34	Flint	Nodule?	Olive black	Non-cortical	24.2	23.5	5.5	3.3	Y	Retouched tool	Retouched flake	N
F5.11	Flint	Gravel?	Medium grey	Non-cortical	30.2	28.2	9.5	9.7	Y	Retouched tool	Multiple tool - end scraper & notched	N

Finds Code	Material	Source	Colour	Flake type	Max length (mm)	Max width (mm)	Max thickness (mm)	Weight (g)	Complete	Stage	Piece type	Burnt
											knife	
F6.12	Flint	Unclear	Moderate yellowish brown	Non-cortical	36.5	17.4	7.5	4.7	Y	Objective piece	Flaked piece	N
F6.14	Flint	Unclear	Dark yellowish brown	Tertiary	30.9	17.2	7.7	3.8	Y	Retouched tool	Scraper - end/nosed	N
F6.23	Flint	Unclear	Light olive grey	Non-cortical	27.2	19.1	4.4	3.1	Proximal	Retouched tool	Notched blade	N
F6.24	Flint	Nodule	Greyish black	Tertiary	37.9	41.5	26.2	37.7	Y	Objective piece	Core - Class B2 blade & flake	N
F6.29	Flint	Nodule?	Brownish grey	Tertiary	22.7	15.1	6.4	1.8	Distal	Debitage	Core rejuvenation flake	N
F6.30	Flint	Unclear	Olive black	Non-cortical	11.0	24.2	4.6	1.1	Distal	Retouched tool	Retouched flake	N
F6.31	Flint	Unclear	Moderate yellowish brown	Non-cortical	19.8	14.8	4.5	1.4	Y	Retouched tool	Retouched flake	N
F6.33	Flint	Nodule?	Greyish black	Secondary	18.2	14.8	12.6	4.9	Y	Objective piece	Core - Class B2 blade	N
F6.47	Flint	Nodule	Dark grey	Tertiary	37.4	20.1	8.0	7.7	Y	Retouched tool	Scraper - end/nosed	N
F7.4	Chert	Gravel	Olive grey	Tertiary	53.5	28.7	8.3	13.0	Y	Retouched tool	Backed blade	N
F7.6	Flint	Gravel?	Brownish grey	Non-cortical	20.6	12.2	5.4	1.6	Y	Retouched tool	Scraper - end/nosed	N
F7.7	Flint	Nodule?	Greyish black	Tertiary	12.9	10.4	3.1	0.4	Distal	Retouched tool	Retouched flake	N
F8.16	Flint	Gravel	Olive grey	Tertiary	40.7	29.4	11.1	15.3	Y	Retouched tool	Scraper - end scraper	N
F8.31	Flint	Unclear	Dark yellowish brown	Non-cortical	10.4	15.9	2.6	0.5	Proximal	Debitage	Blade fragment	N
F9.5	Flint	Unclear	Medium dark grey	Non-cortical	31.4	16.1	5.6	2.6	Distal	Retouched tool	Scraper - end scraper	N
F9.11	Flint	Gravel	Light olive grey	Secondary	13.3	24.0	7.1	1.9	Y	Debitage	Flake	N
F9.31	Flint	Unclear	Pale yellowish brown	Non-cortical	29.1	13.3	5.6	2.1	Medial	Debitage	Blade fragment	N
F9.34	Flint	Unclear	Brownish grey	Non-cortical	27.4	14.6	4.7	1.9	Distal	Retouched tool	Retouched flake	N

Finds Code	Material	Source	Colour	Flake type	Max length (mm)	Max width (mm)	Max thickness (mm)	Weight (g)	Complete	Stage	Piece type	Burnt
F9.37	Flint	Unclear	Greyish brown	Non-cortical	31.0	20.6	6.9	4.0	Y	Retouched tool	Notched flake	N
F10.1	Flint	Gravel?	Brownish grey	Tertiary	21.2	13.2	4.6	1.1	Distal	Retouched tool	Notched flake	N
F10.4	Flint	Nodule?	Brownish black	Non-cortical	13.8	12.6	2.7	0.5	Distal	Debitage	Flake	N
F10.13	Chert	Gravel	Light olive grey	Non-cortical	41.7	24.9	6.3	6.7	Distal	Retouched tool	Multiple tool - concave end-scraper & backed blade	N
F10.15(1)	Flint	Gravel	Light olive grey	Non-cortical	28.9	22.0	9.8	5.7	Y	Retouched tool	Retouched flake	N
F10.15(2)	Flint	Gravel	Light olive grey	Non-cortical	14.3	31.4	7.6	3.7	Y	Retouched tool	Piercer	N
F10.16	Flint	Unclear	Medium dark grey	Non-cortical	28.2	23.9	7.6	4.7	Y	Retouched tool	Knife?	N
F10.18	Flint	Gravel	Moderate yellowish brown	Tertiary	13.9	14.2	4.6	1.1	Axial	Debitage	Flake	N
F10.19	Chert	Gravel	Light olive grey	Tertiary	23.9	24.2	7.8	5.1	Y	Retouched tool	Multiple tool - Concave end scraper, piercer & knife	N
F10.21	Flint	Unclear	Brownish black	Non-cortical	13.3	21.2	3.4	0.8	Y	Debitage	Flake	N
F10.24	Chert	Gravel	Moderate yellowish brown	Tertiary	30.7	26.2	4.8	4.1	Y	Retouched tool	Notched flake	N
F10.26	Flint	Gravel	Olive grey	Tertiary	36.2	16.2	7.3	4.2	Y	Retouched tool	Notched flake	N
F10.27	Flint	Gravel	Dark yellowish brown	Tertiary	23.1	18.6	6.2	2.1	Y	Utilised tool	Utilised flake	N
F10.31	Flint	Gravel?	Dark yellowish brown	Tertiary	13.3	14.6	3.1	0.5	Y	Retouched tool	Edge retouched flake	N
F10.33	Flint	Nodule?	Black	Non-cortical	15.7	13.9	4.4	0.9	Proximal	Debitage	Flake	N
F10.38	Flint	Gravel?	Greyish brown	Tertiary	24.9	16.1	9.5	3.7	Y	Debitage	Flake	N
F10.43	Flint	Nodule?	Brownish black	Non-cortical	24.6	19.5	3.9	1.3	Distal	Retouched tool	Backed blade	N

Finds Code	Material	Source	Colour	Flake type	Max length (mm)	Max width (mm)	Max thickness (mm)	Weight (g)	Complete	Stage	Piece type	Burnt
F10.45	Flint	Nodule	Brownish black	Tertiary	23.1	17.1	4.0	1.2	Y	Debitage	Flake	N
F10.47	Flint	Nodule?	Olive black	Tertiary	18.9	14.9	5.4	2.2	Y	Retouched tool	Multiple tool - end scraper & piercer	N
F11.1	Flint	Unclear	Olive black	Non-cortical	25.8	21.6	7.9	6.2	Proximal	Retouched tool	Knife	N
F11.5	Flint	Nodule	Greyish black	Tertiary	35.2	31.7	28.3	37.7	Y	Objective piece	Core - Class B1 blade & flake	N
F11.11	Flint	Gravel?	Dark yellowish brown	Non-cortical	16.7	21.6	10.7	3.6	Y	Retouched tool	Scraper - side	N
F11.14	Flint	Gravel	Brownish grey	Tertiary	28.0	20.3	4.7	3.0	Y	Retouched tool	Notched flake	N
F11.16	Flint	Gravel	Olive black	Secondary	46.8	27.6	10.0	11.4	Y	Retouched tool	Notched flake	N
F11.27	Flint	Gravel	Greyish black	Secondary	19.9	16.4	17.1	8.8	Y	Debitage	Shatter fragment	N
F11.32	Flint	Gravel?	Olive grey	Non-cortical	25.3	23.9	7.8	3.2	Axial	Retouched tool	Piercer	N
F11.34	Flint	Unclear	Brownish grey	Non-cortical	11.1	13.3	2.8	0.1	Axial	Debitage	Flake	N
F11.43	Flint	Gravel?	Olive grey	Non-cortical	35.3	16.4	3.5	2.8	Y	Retouched tool	Multiple tool - nosed scraper, piercer & backed blade	N
F12.1	Flint	Unclear	Medium light grey	Non-cortical	12.1	20.4	5.5	1.4	Proximal	Retouched tool	Edge trimmed flake	N
F12.4	Flint	Unclear	Olive black	Non-cortical	15.2	12.4	4.4	0.9	Y	Debitage	Flake	N
F12.6	Flint	Nodule?	Olive black	Tertiary	21.5	12.8	15.8	4.6	Y	Debitage	Flake	N
F12.8	Flint	Gravel	Moderate yellowish brown	Non-cortical	15.4	13.8	3.3	0.7	Proximal	Utilised tool	Utilised flake	N
F12.11	Flint	Unclear	Greyish black	Non-cortical	19.8	11.6	5.2	1.2	Axial	Debitage	Flake	N
F12.15	Flint	Unclear	Brownish grey	Non-cortical	42.6	31.4	11.6	16.1	Y	Retouched tool	Notched flake	N
F12.16	Flint	Gravel	Dark yellowish brown	Non-cortical	28.1	13.7	7.3	2.9	Y	Retouched tool	Retouched blade	N
F12.19	Flint	Nodule?	Greyish black	Non-cortical	39.7	36.7	15.3	21.4	Y	Objective	Core - Class C	N

Finds Code	Material	Source	Colour	Flake type	Max length (mm)	Max width (mm)	Max thickness (mm)	Weight (g)	Complete	Stage	Piece type	Burnt
										piece	flake	
F12.20	Flint	Gravel	Olive black	Tertiary	43.1	18.3	9.2	7.0	Distal	Retouched tool	Retouched blade	N
F12.23	Flint	Nodule?	Olive grey	Tertiary	34.0	41.6	34.1	59.3	Y	Objective piece	Core - Class C blade & flake	N
F12.31	Flint	Gravel	Olive grey	Tertiary	40.4	18.8	12.8	7.5	Y	Retouched tool	Retouched flake	N
F12.32	Flint	Nodule?	Olive grey	Tertiary	27.9	38.2	17.7	17.4	Distal	Debitage	Core rejuvenation flake	N
F12.39	Flint	Gravel	Pale yellowish brown	Non-cortical	20.3	13.9	4.7	1.4	Y	Retouched tool	Notched flake	N
F13.10	Flint	Nodule?	Dark yellowish brown	Tertiary	19.0	23.6	5.6	3.2	Y	Retouched tool	Retouched flake	N
F13.30	Flint	Unclear	Olive grey	Non-cortical	21.3	15.5	5.7	2.2	Y	Retouched tool	Piercer	N
F13.31	Flint	Gravel	Dusky yellowish brown	Tertiary	32.3	22.2	6.5	4.3	Y	Retouched tool	Notched flake	N
F14.7	Flint	Unclear	Greyish black	Non-cortical	37.9	41.4	16.5	17.3	Y	Retouched tool	Scraper - discoid?	N
F14.12	Flint	Nodule	Dark grey	Secondary	40.9	32.1	15.4	10.2	Y	Debitage	Flake	N
F14.14	Flint	Unclear	Light olive grey	Non-cortical	9.3	16.5	3.0	0.5	Y	Utilised tool	Utilised flake	N
F14.23	Flint	Gravel	Greyish black	Tertiary	32.5	29.2	11.8	13.7	Y	Retouched tool	Scraper - double notched end	N
F14.24	Flint	Nodule	Greyish black	Secondary	79.5	59.4	38.4	188.6	Y	Objective piece	Core - Discoid	N
F14.25	Flint	Nodule	Greyish black	Tertiary	24.8	10.2	3.7	1.1	Distal	Retouched tool	Retouched blade	N
F15.7	Flint	Unclear	Olive black	Non-cortical	18.2	14.9	5.5	1.7	Y	Debitage	Flake	N
F15.11	Flint	Unclear	Dark reddish brown	Non-cortical	29.1	18.7	4.7	3.0	Distal	Retouched tool	Backed blade	N
F16.16	Flint	Unclear	Dark yellowish brown	Non-cortical	23.3	13.0	5.3	1.6	Y	Debitage	Flake	N
F16.19	Flint	Nodule?	Greyish black	Tertiary	40.2	51.0	12.6	23.1	Y	Retouched tool	Scraper - side nosed scraper?	N

Finds Code	Material	Source	Colour	Flake type	Max length (mm)	Max width (mm)	Max thickness (mm)	Weight (g)	Complete	Stage	Piece type	Burnt
F16.20	Flint	Nodule?	Olive grey	Tertiary	33.7	30.9	23.4	26.9	Y	Objective piece	Core - Class C flake	N
F17.5	Flint	Nodule?	Dark grey	Non-cortical	34.0	24.0	7.0	5.9	Y	Retouched tool	Multiple tool - end scraper & knife	N
F17.20	Flint	Nodule?	Black	Non-cortical	32.0	26.2	6.7	5.9	Y	Retouched tool	Scraper - notched side scraper	N
F18.3	Flint	Nodule?	Dark yellowish brown	Tertiary	43.7	16.5	7.1	4.9	Axial	Debitage	Flake	N
F18.4	Flint	Nodule	Olive black	Tertiary	44.7	33.5	16.0	28.0	Y	Retouched tool	Scraper - double notched side	N
F18.5	Flint	Gravel	Greenish black	Tertiary	40.9	31.9	14.9	24.7	Y	Objective piece	Flaked piece	N
F18.7	Flint	Gravel	Greyish black	Tertiary	15.5	32.3	20.7	11.1	Y	Objective piece	Core - Class D keeled	N
F18.8	Flint	Unclear	Olive black	Non-cortical	16.5	20.1	4.4	1.3	Y	Debitage	Flake	N
F18.19	Flint	Nodule	Brownish black	Tertiary	33.8	27.7	7.6	5.2	Y	Debitage	Flake	N
F18.21	Flint	Gravel	Brownish black	Tertiary	19.9	26.1	4.8	2.5	Y	Debitage	Flake	N
F18.22	Flint	Nodule	Brownish black	Tertiary	30.7	28.3	15.3	12.0	Y	Objective piece	Flaked piece	N
F18.30	Flint	Nodule	Olive black	Tertiary	47.4	27.2	8.0	9.7	Y	Retouched tool	Retouched flake	N
F18.36	Flint	Nodule?	Pale yellowish brown	Tertiary	13.5	23.1	3.0	0.8	Y	Debitage	Flake	N
F19.2	Flint	Gravel	Greyish black	Tertiary	21.0	33.0	5.1	4.3	Y	Retouched tool	Scraper - end scraper	N
F19.13	Flint	Gravel	Olive black	Tertiary	16.9	23.8	4.6	1.5	Y	Debitage	Flake	N
F19.23	Flint	Gravel	Olive black	Tertiary	28.4	25.7	10.3	5.9	Y	Retouched tool	Retouched flake	N
DAT 10												
F1.14	Flint	Nodule?	Moderate yellowish brown	Tertiary	16.0	12.9	2.4	1.0	Proximal	Utilised tool	Utilised flake	N
F2.3	Flint	Unclear	Olive black	Non-cortical	24.0	19.0	6.2	4.1	Distal/axial	Retouched tool	Retouched flake	N
F2.6	Flint	Unclear	Dark yellowish brown	Tertiary	8.9	13.2	2.9	0.1	Y	Debitage	Chip	N

Finds Code	Material	Source	Colour	Flake type	Max length (mm)	Max width (mm)	Max thickness (mm)	Weight (g)	Complete	Stage	Piece type	Burnt
F3.3	Flint	Unclear	Brownish black	Tertiary	30.5	15.0	6.3	2.2	Y	Utilised tool	Utilised blade	N
F4.13	Flint	Gravel	Greenish black	Tertiary	26.4	38.1	32.7	36.2	Y	Objective piece	Core - Class E keeled flake	N
F4.17	Flint	Unclear	Light olive grey	Tertiary	37.3	19.4	8.1	6.5	Y	Retouched tool	Retouched flake	N
F7.3	Flint	Gravel	Dark yellowish brown	Tertiary	21.4	13.4		1.1	Distal	Utilised tool	Utilised blade - knife?	N
F7.10	Flint	Nodule	Light olive grey	Tertiary	19.8	17.1	4.6	1.7	Distal	Utilised tool	Utilised blade - naturally backed	N
F7.12	Flint	Unclear	Brownish black	Tertiary	20.9	20.0	5.0	2.7	Y	Retouched tool	Miscellaneous retouched flake	N
F7.13	Flint	Nodule?	Brownish black	Tertiary	27.0	28.0	5.9	5.1	Y	Retouched tool	Notched flake	N
F8.14	Flint	Unclear	Dark grey	Tertiary	23.1	34.2	13.5	10.4	Y	Objective piece	Flaked piece	N
F10.1	Flint	Nodule?	Olive black	Tertiary	54.9	20.0	11.7	14.6	Medial	Retouched tool	Retouched blade	N
F10.3	Flint	Nodule	Olive black	Tertiary	30.4	36.4	7.9	8.2	Y	Debitage	Flake	N
F10.11	Flint	Gravel	Greenish black	Tertiary	17.1	16.0	6.4	2.3	Y	Debitage	Flake	N
DAT 11												
F2.7	Flint	Nodule?	Dark yellowish brown	Tertiary	22.7	40.0	7.3	7.1	Y	Retouched tool	Retouched flake	N
F3.3	Flint	Gravel	Dark yellowish brown	Non-cortical	19.9	14.1	6.0	1.4	Axial	Retouched tool	Miscellaneous retouched flake	N
F7.2	Flint	Gravel	Dusky yellowish brown	Tertiary	35.2	22.6	10.0	9.7	Y	Retouched tool	Piercer	N
F21.4	Flint	Gravel	Medium light grey	Secondary	45.1	16.7	13.2	16.1	Y	Debitage	Shatter fragment?	Y
F24.1	Flint	Nodule	Olive black	Tertiary	77.0	38.1	28.8	90.3	Y	Retouched tool	Scraper - notched side scraper	N
F25.3	Flint	Nodule	Dark yellowish brown	Primary	17.2	18.8	4.0	0.9	Y	Debitage	Flake	N
F30.1	Flint	Nodule	Brownish black	Secondary	14.8	22.9	5.4	1.4	Y	Debitage	Flake	N

16 Appendix 2: Earthworks Survey Gazetteers

16.1 Gazetteer of Survey Features: Chertsey, Abbey Meads Earthworks Survey *Rowan May*

ID	Feature type	Description	Area
101	Stream	Large stream or drainage channel with a sinuous route, up to 4.5m wide at the top, 1m max depth. Recorded on OS mapping as Burway Ditch. Dry, but massive drain holes below motorway suggests not always. There are trees within the channel along its route.	1
102	Stream	Linear hollow aligned NE-SW, dry at SW end but pipes suggest it is a stream or drainage channel. 3.5m wide, 0.5m deep.	1
103	Stream	Linear stream or drainage channel aligned NW-SE. 2m wide at top to V-shaped base, 0.3-0.4m deep.	1
104	Stream	Linear stream or drainage channel aligned NW-SE in fairly sinuous route. 4m wide at top to U-shaped base, 0.6-0.8m deep.	1
105	Stream	Stream or drainage channel, 3.5m wide, 0.8m max depth. Dry.	1
106	Hollowway	Linear trackway, 0.6m wide, 0.2-0.3m deep, ephemeral in places but just about visible. Aligned NW-SE.	1
107	Hollowway	Linear scarp or very ephemeral hollow, possibly a natural scarp or track. 0.15m max depth up to 1m wide.	1
108	Scarp	Scarp adjacent to stream, with higher ground to east. 0.2m max height. Possibly a lynchet or edge of the level area with furrows to the east (109).	1
109	Ridge	Linear ridge, the most obvious of several very faint linear undulations in this area. 0.15m max height, 1.2m wide.	1
110	Scarp	Linear scarp, one of several very faint linear undulations in this area. 0.2m max height, higher ground to west. It marks the south edge of a slightly raised, level area with furrows (109).	1
111	Hollow	Irregular hollow. 0.2m max depth, up to 2.5m wide by 4m long. Possibly associated with adjacent stream.	1
112	Hollow	Shallow oval hollow 5m x 3m, 0.2m deep, aligned NE-SW.	1
113	Furrow	Faint linear hollow aligned NW-SE. One of very few furrows visible on the ground. Possibly drainage (water meadow) rather than cultivation. 1m wide, 0.1m deep.	1
114	Raised trackway	Embanked track, 2.2m wide, 0.3m high, running e-w across the south edge of the field. Probably associated with the conveyor labelled on modern mapping.	1
115	Bridge abutments	Concrete bridge abutments to either side of Burway Ditch. c6m long on NE side, 5m on SW, 0.6m high. No other bridge features visible.	1
116	Semicircular bank	Semicircular bank adjacent to stream, 5m long by 2.5m wide, 0.8m max height. Possibly quite recent.	1
117	Palaeochannel	A series of linear scarps, varying in height between 0.3m and 1.5m. These appear to be associated with a probable palaeochannel visible on lidar.	1

118	Furrow	Lidar data shows faint linear furrows aligned roughly north-south across the area south of stream 101 and west of stream 102. These are not visible as earthworks on the ground, presumably being too ephemeral.	1
119	Drainage channel	Linear channel between gravel pit and stream. 2.5m wide, 0.7m deep. Probably modern.	3/5

16.2 Gazetteer of Survey Features: Laleham Golf Course Earthworks Survey *Laura Strafford*

ID	Feature type	Description	Visible on the ground?
201	Field boundary	NW-SE aligned, with a SW return. Clear on lidar data, not very evident on ground. NW-SE alignment appears to follow course of current tree line, NW-SE return no evident on the gound.	Partially
202	Linear depression	Very slight linear depression, aligned NE/SW. Not very distinct	Yes
203	Linear depression	Very slight linear depression, aligned NE/SW. Not very distinct. Golf feature?	Yes
204	Field boundary	Very slight depression, aligned NE-SW. Visible intermittently	Partially
205	Field boundary	NW-SE aligned, appears to follow current intermittent tree line. Where there are gaps in the trees, it is not evident.	Partially
206	Field boundary	Clear NE-SW linear feature on lidar data. Very slight hint of a depression at the eastern end, visible for no more than 10m in length. Not able to trace it on the ground for the full length depicted in lidar data, although much of the area is obscured by heavy tree cover	Partially
207	Field boundary	Distinctive linear depression, shown as a field boundary on 1872 OS map. NE-SW aligned. Approx. 6m wide at top with gently sloping sides and a flattish base. 0.60m deep. Now mostly filled with trees.	Yes
208	Linear depression	Hint of a very slight depression aligned NE-SW. Very faint. Visible for approx. 20m in length.	Partially
209	Enclosure	SM. Rasied earthowrks, with outer ditch. Clearest feature in the survey. Banks measure max. 1.40 in height from the base of the outer sitch, although varies.	Yes
210	Linear depression	Linear scarp, 0.4m max height, higher ground to west. Possible a former golf feature	Yes
211	Mound	Slight raised feature. Likely part of former golf course, not as dinstinct as some other golf features.	Yes
212	Linear depression	Very slight depression. Clear on Lidar	Partially
213	Linear depression	Faint linear hollow aligned NE-SW. Clear on lidar but very hard to distinguish on the ground	Partially
214	Drainage channel	Dry drainage channel, clear on the ground but difficult to access in places due to vegetation. Well defined where accessible. 3-4m wide at top, with steep sides. Approx. 1m deep.	Yes
215	Coronation benches	Pair of coronation benches. One damaged. Iron, heavily corroded.	Yes
216	Linear depression	Clear on lidar. Gravel pathway of golf course.	Yes
217	Drainage	NE-SW aligned drainage channel,forming eastern site	Yes

	channel	boundary. Dry. Approx. 2m in width at top, 0.4m in depth. Heavily vegetated	
218	Drainage channel	Well defined drainage channel, serving as the southern site boundary. Heavily vegetated in placess Max with 5m at top, approx. 0.6m deep	Yes
219	Drainage channel	Well defined drainage channel, serving as the western site boundary. Very heavily vegetated, not possible to get close to inspect.	Yes
220	Linear	NW-SE aligned linear feature, clear on lidar but not evident on the ground. Origin unclear - not depicted on historic maps	No
221	Linear	NE-SW aligned linear showing on lidar data. Not observed on the ground	No
222	Field bounday	NE-SW aligned linear showing on lidar data, between 205 and 223. Depicted on hisotic OS maps. Not observed on the ground	No
223	Field bounday	NW to SE aligned linear, depicted on hisotirc OS maps but not visible on the ground	No
224	Ridge and furrow	Large area of NE to SW aligned ridge and furrow, visible on lidar data. Not observed on the ground	No
225	Ridge and furrow	Large area of N to S aligned ridge and furrow, visible on lidar data. Not observed on the ground	No
226	Linear	NW to SE aligned linear, visible on lidar data. Not observed on the ground.	No
227	Linear	NW to SE aligned linear, depicted on hisotirc OS maps but not visible on the ground	No

17 Appendix 3: **Environmental Assessment of Waterlogged Deposits** *Tina Roushannafas*

17.1.1 As part of the RTS geoarchaeological evaluation, a rapid assessment of waterlogged material was made for each site. The assessment identified the presence/absence of key palaeoenvironmental proxies and their condition of preservation. These results are listed, together with an approximate scale of abundance, in Table 17.1.

17.1.2 Samples were selected based on identification in the field of palaeochannel sequences and/or the presence of organic matter. Suitable samples for which radiocarbon dates have been obtained were prioritised.

17.1.3 Material was processed using the 'wash-over' method as described in Kenward *et al.* (1980), where water is added to the deposit which is then swirled and the supernatant, with its load of suspended organic particles, is decanted into a stack of graded sieves, of which the smallest measured 0.25mm. This process is repeated until no further organic particles are carried off. This method is employed rather than flotation because water saturated organic material does not always readily float to the surface. It is also considered to be gentler and less damaging to plant remains than wet sieving (Charles *et al.* 2009). No pre-treatment method was considered necessary in this instance.

17.1.4 The range of material recovered from the samples included plant remains (both seeds and vegetative), molluscs, coleoptera (beetles), fly puparia, ostracods, otoliths and daphnia as displayed in Table 17.1. With the exception of fly puparia, daphnia and otoliths, the remaining categories (plant remains, insects, ostracods and molluscs) were present in abundance in multiple samples. The samples were not examined for microfossil remains but have the potential to preserve such proxies as pollen and diatoms.

17.1.5 At Station Road, Wraysbury (Horton) and Shepperton samples recorded as 'organic alluvium' demonstrated little organic preservation or diversity, and, just on the basis of the examined samples, the palaeoenvironmental macrofossil potential of these sites is deemed low. Higher proportions of seeds were obtained from one sample from Shepperton, however these were seemingly all the same species of *Caryophyllaceae* and are likely to be modern contaminants. Examination of the borehole data does not suggest there to be considerable variation in the nature of the deposits across these sites, and therefore although only a very small proportion of the material was examined, it might reasonably be considered representative.

17.1.6 The assessed samples from the remaining sites demonstrated good levels of organic preservation and diversity, and would benefit from further targeted sampling and analysis as the project progresses. Particularly abundant and diverse waterlogged seeds were observed in the sample taken from the organic alluvial deposit at Laleham Golf Course, while the proportion of seeds in proportion to other categories of environmental remains at Southlea Farm, Datchet was low, suggesting an aquatic environment in which high numbers of decomposing organisms were present.

17.1.7 This preliminary assessment demonstrates the potential of the waterlogged deposits to preserve sufficient palaeoenvironmental remains to undertake landscape reconstruction. In addition microfossils are also likely to be present, although were not the focus of this work. The associated radiocarbon age determinations demonstrate the accumulation of deposits at these sites to be occurring during the early-mid Holocene. These sites have the potential to allow a better understanding of the nature and evolution of the environment in association with any excavated archaeological remains.

Site	WS	Sample no	Depth	Deposit Interpretation	Date	Size	Seeds	Molluscs	Coleoptera	Ostracods	Fly puparia	Otoliths /Fish bones	Daphnia	Organic density	Preservation?	Potential	Notes
DAT	WS05	62	3.4m	Palaeo-channel (near base)	None	100 ml	x	xxx	xxx	xxx	x	xx		High	Good	High	V. little in way of seeds, aquatic enviro with rapid consumption
THM	WS18	146	1.8m	Peat	6076 +-32	400 ml	xx	xx	xxx	xxx		x		High	Good	High	
CHE	WS15	42	3.6-80	Palaeo-channel (base)	3474 +-32	300 ml	xxx		xxx	xx		x	x	Moderate	Good	High	
SHEP	WS01	112	4.9m	Organic alluvium	1044 +-32	125 ml		x						Low	Moderate	Low	
DES	WS04	94	1.5m	Minera-genic alluvium, observed wood	1852 +-32	125 ml	xxx	xxx	xx	xx				High	Good although coleop-tera seem especially fragmen-tary	High	High proportion of wood
LAL	WS12	166	2.8m	Organic alluvium	None	180 ml	xxx	xxx	xxx	x				High	Good	High	Well preserved high diversity of seeds, high proportion of shell

HOR	WS02	98	1.5-6	Organic alluvium	None	300 ml	x	x		x	x			Low	Moderate	Low	
SHEP	WS01	104	3.2m	Organic alluvium	None	410 ml	See note	x						Low	Good- but likely modern contam	Low	Large number of same type of Caryophylaceae with little other organic material suggests possible contamination of sample from nearby plant. At least one other species, so possible that further samples would produce ancient seeds, but overall organic content low and potential limited

Table 17.1: River Thames Waterlogged Assessment

x= <10
xx= 10-50
xxx= 50+

The River Thames Scheme represents a new landscape-based approach to creating healthier, more resilient and more sustainable communities by reducing the risk of flooding and creating high quality natural environments.

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