Hampshire Water Transfer and Water Recycling Project

Environmental Statement – Appendix 7.5 Geoarchaeological monitoring reporting

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Addendum Appendix 7.5 Geoarchaeological monitoring reporting

1. The following document forming Environmental Statement (ES) Appendix 7.5 Geoarchaeological monitoring reporting, Volume II (Document reference 6.2, DCO Volume 6) presents the results of the geoarchaeological monitoring of the Phase 1 and Phase 2 Ground Investigation (GI) works. This was conducted between November 2022 to May 2023 prior to the submission of the Preliminary Environmental Information (PEI) Report.
2. This report has been used to inform decisions associated with the Project Design, the Outline Written Scheme of Investigation (WSI) and ES Chapter 7 Archaeology and cultural heritage, Volume I (Document reference 6.1, DCO Volume 6).
3. This report has been included as an appendix to provide additional supporting detail to the assessment contained in ES Chapter 7 Archaeology and cultural heritage, Volume I (Document reference 6.1, DCO Volume 6).
4. The baseline is therefore presented as drafted following completion of the Geoarchaeological Monitoring prior to the submission of the PEI Report and serves as a point in time document. As such, this document includes references to terminology and documents in place prior to the submission of the PEI Report. This appendix should therefore be read in conjunction with ES Chapter 7 Archaeology and cultural heritage, Volume I (Document reference 6.1, DCO Volume 6) and associated appendices.

Water for Life Hampshire (WfLH)

Geoarchaeological and Archaeological Monitoring of Phase 1, Phase 2 and Phase 3a–3c Ground Investigation Works



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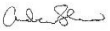
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Summary

Wessex Archaeology was commissioned by Southern Water Ltd to produce a report outlining the results of archaeological and geoarchaeological monitoring of Ground Investigation (GI) works carried out to inform the design for the proposed Hampshire Water Recycling and Water Transfer Project. The monitoring was carried out in order to mitigate against impacts from the GI works on the archaeological resource, and to characterise any archaeological or geoarchaeological deposits present. This is a point in time document and all project descriptions and terminology was correct at the time of writing.

The Hampshire Water Transfer and Water Recycling Project introduces a new treatment process to turn treated wastewater into purified recycled water, and then transfer this water to the Havant Thicket Reservoir. The Project development proposals comprise a new Water Recycling Plant located south of Havant, a new underground pipeline linking the Water Recycling Plant to Havant Thicket Reservoir, and a new underground pipeline linking the Water Recycling Plant to Otterbourne Water Supply Works.

The GI program comprised four phases, Phase 1 (24 interventions), Phase 2 (47 interventions), Phase 3a (14 interventions), Phase 3b (70 interventions) and Phase 3c (90 interventions). Selected interventions were identified for archaeological, geoarchaeological and/or combined archaeological monitoring (Royal HaskoningDHV 2022, 2023, 2024). In total 14 interventions were archaeologically monitored, 40 geoarchaeologically and 47 subject to combined monitoring. The potential of all Quaternary geological units identified during the GI works to preserve significant paleoenvironmental evidence has been reviewed. Stratigraphic logs from the Phase 1, Phase 2 and Phases 3a–3c were subject to geoarchaeological review. These logs were combined with previous GI records and a review of British Geological Survey (BGS) archive boreholes (BGS GeoIndex) from within a 1km boundary of the Project's Environmental Impact Assessment (EIA) scoping area. The combined dataset has been used to provide an updated deposit model for Quaternary geological deposits within the Project Boundary.

The monitoring successfully characterised the Quaternary deposits present at selected locations and identified deposits with geoarchaeological potential. This potential includes for significant archaeological remains (artefacts, archaeological layers etc), as well as palaeoenvironmental remains reflective of past human activity, landscapes and environments. No archaeology was identified during the monitoring. Due to the methods applied and scope of the GI works, opportunities for sampling geoarchaeological deposits with palaeoenvironmental potential were limited, but a small number of samples suitable for palaeoenvironmental assessment were obtained.

The results of the monitoring have been combined with data presented in a prior Geoarchaeological Desk-Based Assessment (GDBA) and Geoarchaeological Landscape Characterisation (GLC) (Wessex Archaeology 2023a), which utilised available datasets, including Phase 1 and 2 GI data, to divide the Project's EIA Scoping Area into 28 Geoarchaeological Character Zones (GCZs) based on the Quaternary landscape features and deposits present. The combine datasets have been reviewed in relation to outline Project plans for development (Southern Water 2024) to provide an assessment of the Quaternary geoarchaeological resource that is likely to be impacted.

The review of geoarchaeological potential and proposed impacts has established that the Project is likely to impact on Quaternary geological deposits with significant geoarchaeological potential within defined areas of specific GCZs. GCZs containing deposits with the greatest geoarchaeological potential and which are likely to be impacted on are:

- GCZs 5b-c – Pleistocene Raised Beach Deposits, overlain by Pleistocene Head Deposits. The Raised Beach Deposits are correlated with the Brighton-Norton Beach, dated to late MIS 7 to MIS

6 (220–170 Kya; Bates et al. 2010). The Raised Beach Deposits and Head Deposits have the potential to contain significant Middle Palaeolithic archaeology, which could include in situ lithic scatters. The Raised Beach Deposits have high potential to contain significant palaeoenvironmental evidence, whilst the Head Deposits have moderate potential.

- GCZ 6 – Quaternary deposits within a basin formed in the chalk bedrock. Three sets of deposits with geoarchaeological potential have been highlighted; Chalky Silts and Gravels, which are likely Pleistocene freshwater Pleistocene deposits, and which may date to MIS 3 (57 –29 Kya) and/or MIS 6 (191–130 Kya), overlying likely Pleistocene Gravelly Clays, whose mode of deposition is uncertain, and likely Holocene alluvial Clays formed in Langstone Harbour. The Chalky Silts and Gravels and Gravelly Clays have potential to contain significant palaeoenvironmental datasets, whilst the Clays have generally low palaeoenvironmental potential, but do have archaeological potential.
- GCZ 8 – Dry valleys and solution features formed with the chalk bedrock on Portsdown Hill, highlighted as localised capture points for Quaternary sediments. Deposits within both the dry valleys and solution features can preserve significant prehistoric archaeology, including in situ lithic scatters on buried land surfaces, and palaeoenvironmental evidence. Palaeolithic handaxes are recorded from Portsdown Hill which may be from these contexts, whilst significant Mesolithic lithic assemblages are known from similar capture points and deposits in the area.
- GCZ 12 – Pleistocene river terraces, some of which are in a previously unrecognised likely former Pleistocene course of the Wallington River, and solution features. The Wallington Rivers former course is within what is now a dry valley that has subsequently been infilled with Pleistocene and/or Holocene Slope Deposits. Both the Pleistocene River Terrace Deposits and Pleistocene/Holocene Slope Deposits have potential for significant archaeology dating from the Palaeolithic period onwards. They may also locally include units with palaeoenvironmental potential. Solution features with potential for solution features containing geoarchaeologically significant deposits occur in areas of chalk bedrock.
- GCZ 15 – Up to seven Pleistocene river terraces of the River Meon, in places overlain by Pleistocene and/or Holocene Slope Deposits. The age and geoarchaeological potential of the terraces is poorly understood, but the large number of terraces indicates potential for Palaeolithic archaeology.
- GCZ 17b – Valley containing Slope Deposits, with a possible Holocene channel in the base. The Slope Deposits may include Holocene Colluvium overlying Pleistocene Head. The sediments have not been investigated and their potential to contain archaeology is uncertain, but prehistoric archaeology, which could include surfaces associated with in situ lithic scatters, could occur. The possible Holocene channel has only been identified in LiDAR data and it's geoarchaeological potential is unknown.
- GCZ 19 – Valley of Kitnocks Gully, a tributary of the River Hamble. The valley contains sequences of Slope Deposits and areas where the British Geological survey (BGS) map Holocene Alluvium. These Slope Deposits may include Holocene Colluvium and Pleistocene Head Deposits, which may provide contexts for significant prehistoric archaeology. The Holocene Alluvium has not been investigated and its geoarchaeological potential is unknown.
- GCZ 21 – Pleistocene river terraces of the River Hamble and overlying Pleistocene/Holocene Slope Deposits, and Holocene Alluvium. The specific distribution of River Terrace Deposits and the number of river terraces is uncertain. Geoarchaeological potential is similarly poorly understood but large amounts Palaeolithic artefacts are known from the terraces of the River Test, of which the Hamble is a tributary, which indicates potential for Palaeolithic archaeology. Impacts on the Holocene Alluvium will be limited, with the exception of the northern edge of the Holocene floodplain, a landscape setting where prehistoric activity could be expected.

- GCZ 24 – Holocene floodplain of the Bow Lake Stream where palaeochannels with geoarchaeological potential occur. One possible palaeochannel may be impacted. Potential for archaeology in areas on the southern and northern edges of the alluvial floodplain is also highlighted.
- GCZ 26 – River terraces of the River Itchen, locally overlain by Head Deposits. At least two Pleistocene river terraces will be impacted, Terrace 3 and Terrace 1. The Terrace 3 deposits are equivalent to those located to the north at Colden Common, which have produced the most significant Lower to Middle Palaeolithic archaeological assemblages known from the terraces of the River Itchen. The geoarchaeological potential of Terrace 1 is less well understood but these deposits have also produced Palaeolithic archaeology.

The results of the GI monitoring and review of the geoarchaeological resource has demonstrated that in defined areas the Project will impact on deposits that have significant geoarchaeological potential. In order to mitigate against these impacts a program of targeted geoarchaeological investigations will be required. A series of Project-specific research objectives and targeted recommendations for geoarchaeological investigations are provided.

Hampshire Water Transfer and Water Recycling Project

Archaeological and Geoarchaeological Monitoring of Phase 1, Phase 2 and Phases 3a–3c Ground Investigation Works

1 INTRODUCTION

1.1 Project and planning background

1.1.1 Wessex Archaeology was commissioned by Southern Water Ltd ('the client') to carry out and produce a report outlining the results of archaeological and geoarchaeological monitoring of Ground Investigation (GI) works which are to inform for the proposed Hampshire Water Transfer and Water Recycling Project ('the Project').

1.1.2 The Environment Agency has identified the South East of England as an area of 'serious water stress'. This means that demand for water can outstrip supply, especially during drought conditions. In Hampshire in particular, a growing population, changing climate and a sensitive environment means there is not enough water for people and nature. A strategic need to alleviate these current and future problems in Hampshire has therefore been identified.

1.1.3 Southern Water's 'Water for Life – Hampshire' programme sets out a range of measures that are needed to make up this shortfall in water, estimated to be around 192 million litres of water per day during drought conditions. The programme includes measures to manage demand and leakage reduction, however the majority of the deficit would be provided by a strategic new water source – the Hampshire Water Recycling and Water Transfer Project.

1.1.4 This Hampshire Water Transfer and Water Recycling Project introduces a new treatment process to turn treated wastewater into purified recycled water, and then transfer this water to the Havant Thicket Reservoir. This Project requires:

- a new Water Recycling Plant located south of Havant,
- a new underground pipeline linking the Water Recycling Plant to Havant Thicket Reservoir, and
- a new underground pipeline linking the Water Recycling Plant to Otterbourne Water Supply Works.

1.1.5 The proposed location of the Water Recycling Plant, and the Project Boundary, are illustrated in **Figure 1**.

1.1.6 A Development Consent Order application (DCO) for the Project is being prepared.

1.1.7 Targeted archaeological and geoarchaeological monitoring of selected GI interventions was carried out to mitigate against impacts of the GI program on the archaeological and geoarchaeological resource and to characterise any geoarchaeological deposits present. The monitoring was undertaken between 18th November 2022 and 13th May 2024.

1.1.8 The works carried out were in accordance with an approved Written Scheme of Investigation (WSI) (Royal HaskoningDHV 2022, 2023, 2024).

1.2 Scope of works

1.2.1 Potential was identified for the GI program to impact on both archaeological features and layers overlying geological deposits and on Quaternary geological deposits with 'geoarchaeological' potential (Royal HaskoningDHV 2022, 2023, 2024). Geoarchaeological potential refers to the archaeological resource contained within Quaternary geological deposits. This resource can consist of both archaeological remains (artefacts, archaeological layers etc), as well as environmental remains reflective of past human activity, landscapes and environments. A specialist 'geoarchaeological' approach, which combines archaeological, geological, geophysical and palaeoenvironmental investigative techniques, is required when investigating this archaeological resource.

1.2.2 In order to mitigate against impacts from the GI on the archaeological and geoarchaeological resource, and to characterise any geoarchaeological deposits present, requirements for targeted archaeological and geoarchaeological monitoring of the GI works were identified (Royal HaskoningDHV 2022, 2023, 2024).

1.2.3 A phased program of Ground Investigation (GI) works has been carried out across the Project. These phases are:

- Phase 0
- Phase 1
- Phase 2
- Phases 3a–3c.

1.2.4 The locations of investigations associated with these phases of GI works are illustrated in **Figure 2**.

1.2.5 The monitoring works reported on relate specifically to the Phase 1, Phase 2 and Phases 3a-c GI. Phase 0 GI was subject to a separate program of geoarchaeological monitoring that has been reported on separately (Wessex Archaeology 2022).

1.2.6 Phase 1, Phase 2 and Phases 3a-c GI boreholes and trial pits were identified for archaeological, geoarchaeological or combined archaeological and geoarchaeological monitoring (Royal HaskoningDHV 2022, 2023, 2024). Interventions monitored are listed in **Appendix 1**.

1.2.7 All works undertaken were in accordance with a WSI which detailed the aims, objectives, methodologies and standards to be employed to undertake the monitoring (Royal HaskoningDHV 2022, 2023, 2024).

1.3 Scope of document

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

1.3.2 This is a point in time document and all project descriptions and terminology was correct at the time of writing.

1.3.3 The document is the final report relating to archaeological and geoarchaeological works associated with the Phase 0, Phase 1, Phase 2 and Phase 3a-c GI program. Previous associated reports are summarised in **Table 1**.

Table 1 Previous reports

Report type	Title	Report no.	Reference
Archaeological and geoarchaeological monitoring of GI	Budds Farm Waste Water Treatment Works Geoarchaeological Monitoring of GI Works	267080.02	Wessex Archaeology 2022
Desk-top assessment	Hampshire Water Transfer and Water Recycling Project. Geoarchaeological Desk-based Assessment and Landscape Characterisation	279970.01	Wessex Archaeology 2023a
Interim archaeological and geoarchaeological monitoring of GI	Hampshire Water Transfer and Water Recycling Project. Geoarchaeological Monitoring of Phase 1 and 2 Ground Investigation Works. Interim Factual Report	271400.02	Wessex Archaeology 2023b

1.3.4 The report adds to information provided in a Phase 0 monitoring report (Wessex Archaeology 2022), and a prior Geoarchaeological Desk-based Assessment (GDBA) and Geoarchaeological Landscape Characterisation (GLC) (Wessex Archaeology 2023a). The report also follows a prior related interim factual report, which provided a summary of the results of the archaeological and geoarchaeological monitoring of the Phase 1 and 2 GI works (Wessex Archaeology 2023b).

1.3.5 The results of the monitoring make available information about the archaeological and geoarchaeological resource (a preservation by record) present at selected Phase 1, Phase 2 and Phases 3a-c GI locations and provide an assessment of the geoarchaeological deposits present.

1.3.1 The GDBA and GLC (Wessex Archaeology 2023a) provided an initial assessment of the Quaternary deposits across the Project's Environmental Impact Assessment (EIA) Scoping Area and their geoarchaeological potential. This utilised all available data, which included the results of the Phase 1 and 2 GI to provide a deposit model and to divide the Project EIA Scoping Area into 28 Geoarchaeological Character Zones (GCZs) based on variations in Quaternary deposits present. These GCZs are illustrated in **Figure 2**.

1.3.2 The GDBA and GLC identified the need, dependent on Project development proposals, for targeted geoarchaeological investigations within these GCZs. This report provides an updated deposit model and assessments of geoarchaeological potential, which have been combined with a review of outline Project plans for development (Southern Water 2024), to further consider requirements for targeted geoarchaeological investigations.

2 BACKGROUND

2.1 Introduction

2.1.1 The Geoarchaeological Desk-based Assessment (GDBA) and Geoarchaeological Landscape Characterisation (GLC) reviewed the landscape, geological and geoarchaeological context of the Project, and the known archaeological and geoarchaeological resource. Information provided by the GDBA and GLC relevant to the archaeological and geoarchaeological monitoring is outlined below.

2.2 Project boundary and landscape setting

2.2.1 Draft Order Limits (29/01/2024) have established a Project Boundary for the Project. The Project Boundary is illustrated in **Figure 3**.

2.2.2 Phase 1, Phase 2 and Phases 3a–c GI locations were situated across the Project area, mostly within the Project Boundary (**Figure 3**). The Project Boundary extends from Havant in the south, from where it runs north to Havant Thicket Reservoir, and northwest to Otterbourne. At Havant, the existing Budds Farm Wastewater Treatment Plant and land bordering Langstone Harbour is located within the Project Boundary.

2.2.3 North of the Budds Farm Wastewater Treatment Plant, a new underground pipeline will link the new Water Recycling Plant to Havant Thicket Reservoir. Here the Project Boundary follows the valleys of the Brockhampton and Hermitage Streams.

2.2.4 Northwest of Havant, along the proposed course of the new underground pipeline linking the Water Recycling Plant plant to Otterbourne Water Supply Works, the Project Boundary initially passes across Portsdown Hill, a chalk ridge trending east-west north of Cosham-Fareham. At the western end of Portsdown the Project crosses the valley of the Wallington River.

2.2.5 Northwest of Portsdown Hill the Project Boundary crosses the Meon, Hamble and the Itchen Valleys. Within the Meon Valley the Project Boundary includes land north of Knowle, alongside the River Meon, north of the River Meon within the Wickham Park Golf Club and north of the golf course, bordering Titchfield Lane. Within the Hamble Valley, the Project Boundary includes land south of Bishop's Waltham, bordering the River Hamble east of Brokes Copse. Between the Hamble and Itchen Valleys, the Project Boundary crosses the Bow Lake Stream, an east bank tributary of the River Itchen. The northwest end of the Project Boundary is located at southern edge of the South Downs and includes the Itchen Valley. Otterbourne Water Supply Work is situated at the northwest limit of the Project Boundary.

2.3 Geology

2.3.1 The bedrock geology underlying the Project consists of Cretaceous Chalk, frequently overlain by Palaeogene sands, silts and clays (**Figure 4**).

2.3.2 Along the southern margins of the Project Boundary, from the Budds Farm Wastewater Treatment Plant in the east to the Meon Valley in the west, chalk of the Newhaven Chalk Formation, Spetisbury Chalk Member and Portsdown Chalk Member form the uppermost solid geology. Deposited in marine environments during the late Cretaceous period (84 –72 Mya), these deposits form the Portsdown Anticline, an extensively eroded inlier of chalk, separated from the chalk forming the South Downs to the north by a west to east syncline structure of the Hampshire Basin. The Hampshire Basin is infilled with younger Palaeogene sediments.

2.3.3 North of the Budds Farm Waste Water Treatment Plant, the Project Boundary crosses the Paleogene deposits within the Hampshire Basin. Geological units include the London Clay Formation and Bognor Sand Member, fringed to both the north and south by deposits of the Lambeth Group. Similarly, much of the Project area northwest of the River Meon is underlain by Palaeogene sediments of the Hampshire Basin, including deposits of the London Clay Formation, Whitecliff Sand Member, Wittering Formation, Earnley Sand Formation and Lambeth Group. These Palaeogene sediments were deposited in a shallow marine environment between 59–41 Mya.

2.3.4 The north-west end of the Project Boundary at Otterbourne is situated on the northern margin of the Hampshire Basin and at the southern margin of the South Downs, where late Cretaceous chalk (84–72 Mya) of the Tarrant Chalk and Culver Chalk Embers outcrop are the upper bedrock sediments.

2.3.5 The bedrock geology provides the template for Quaternary landscapes and their associated Pleistocene (c. 500–11.7 Kya) and Holocene (<11.7 Kya) geological sediments. It is these Quaternary sediments which can contain geoarchaeological evidence (artefacts, archaeological layers, environmental remains etc) dating from the Palaeolithic period onwards. This can include artefacts, archaeological features and layers, and palaeoenvironmental evidence reflective of landscapes, environments and human landscape-use.

2.3.6 The Quaternary geology shown within the Project Boundary by the BGS (GeoIndex) is illustrated in **Figure 5**. However, it should be noted that the GDBA and GLC (Wessex Archaeology 2023a) demonstrated that BGS mapping of these deposits does not accurately reflect the sediments present, particularly at the eastern end of the Project.

2.3.7 The GDBA and GLC (Wessex Archaeology 2023a) demonstrated that the east of the Project Boundary contains Middle and Upper Pleistocene Quaternary sediments of the Sussex and Hampshire coastal plain raised beach sequences, which occur within the western end of a semi-enclosed embayment formed by the chalk of the Portsdown Anticline. Further west, Quaternary geology is defined by Pleistocene and Holocene fluvial drainage systems of the Wallington River and Rivers Meon, Hamble and Itchen, which developed within the syncline of the Hampshire Basin.

2.3.8 The known geoarchaeological resource associated with these Quaternary geological deposits and landscape features is summarised in **Section 2.5**.

2.4 Chronology

2.4.1 Quaternary deposits associated with geoarchaeological evidence dating from the Middle Palaeolithic period (<240 Kya) onwards have been identified within the Project. Investigations of such deposits on these timescales is typically undertaken with reference to geological periods (e.g. Quaternary), epochs (e.g. Pleistocene) and sub-epochs (e.g. Devensian) that reflect major climate sea-level and/or environmental changes. Here we adopt British nomenclature correlated to the Marine Isotope Stage (MIS) record to distinguish between different climatic periods, with dates given in Kya BP (thousands of years before present).

2.4.2 Marine Isotope Stages are deduced from marine palaeoclimatic records and reflect alternating warm (interglacial and interstadial) and cold (glacial and stadial) periods throughout the Quaternary (**Table 2**).

2.4.3 Where age estimates were available these were expressed in millions of years (Mya), thousands of years (Kya) and within the Holocene epoch as either years Before Present (BP), Before Christ (BC) and Anno Domini (AD). These were linked to the global Marine Isotope Stage (MIS) chronological framework.

Table 2 British Quaternary chronostratigraphy

Geological Period	Chronostratigraphy		Age (Kya)	MIS
Holocene	Holocene interglacial		11.7 – present	1
Late Pleistocene	Devensian Glaciation	Loch Lomond Stadial	11.7 – 12.9	2 – 5d
		Windermere Interstadial	12.9 – 15	

Geological Period	Chronostratigraphy		Age (Kya)	MIS
		Dimlington Stadial	15 – 26	
		Upton Warren Interstadial	40 – 43	
		Early Devensian	60 – 110	
	Ipswichian interglacial		115 – 130	5e
Middle Pleistocene		Unnamed cold stage	130 – 374	6
		Aveley interglacial		7
		Unnamed cold stage		8
		Purfleet interglacial		9
		Unnamed cold stage		10
	Hoxnian interglacial		374 – 424	11
	Anglian glaciation		424 – 478	12
	Cromerian Complex		478 - 780	13 – 19

2.5 Archaeological and geoarchaeological context

2.5.1 The following groups of Quaternary geological deposits occur within landscape features crossed by the Project Boundary:

- Colluvium (Holocene)
- Alluvium (Holocene)
- Sediments infilling solution features (Pleistocene and Holocene)
- Head Deposits (Pleistocene)
- River Terrace Deposits (Pleistocene)
- Lower Coastal Plain Freshwater Deposits (Pleistocene)
- Raised Beach Deposits (Pleistocene)

2.5.2 Summary information relating to these deposits and the geoarchaeological records (artefacts, archaeological layers, environmental remains etc.) they may preserve is provided below.

Pleistocene Raised Beach Deposits

2.5.3 The eastern end of the Project Boundary is situated at the western limit of the Sussex and Hampshire coastal plain. These ‘raised beaches’ contain terrestrial, estuarine and marine sediments and include units associated with Lower and Middle Palaeolithic archaeology.

2.5.4 Pleistocene raised beach deposits within the coastal plain have been recognised since the 1850s (Prestwich 1859). Initially two sets of raised beach deposits were identified, one situated at 30m above Ordnance Datum (OD), referred to as the Upper Coastal Plain, and a lower series of sediments at 4.5m OD, forming the Lower Coastal Plain (Palmer and Cooke 1923, Fowler 1932, Calkin 1934). However, it is now recognised that deposits within

the Lower Coastal Plain include at least three phases of sea-level high stands as well as low stands (Bates et al. 2000, 2003, 2007, 2010).

2.5.5 The current stratigraphic and local palaeogeographic succession for the Pleistocene raised beach sequence of the Sussex and Hampshire coastal plain are outlined in **Table 3** and summarised below.

Table 3 Stratigraphic and local palaeogeographic succession for the Pleistocene raised beach sequence of the Sussex and Hampshire coastal plain (after Bates et al. 2010)

Geological period	Age (Kya)	Marine Isotope Stage (MIS)	Raised Beach	Local palaeogeography
Holocene	11.7 – present	1		Harboured
Late Pleistocene	26 – 11.7	2		
	57 – 26	3		
	72 – 37	4		
	116 – 72	5d – 5a		
	130 – 116	5e	Pagham Raised Beach	Open coastline
Middle Pleistocene	191 – 130	6		
	243 – 191	7	Brighton/Norton Raised Beach	
			? Aldingbourne Raised Beach	Embayed coastline
	300 – 243	8		
	337 – 300	9	? Aldingbourne Raised Beach	Embayed coastline
	374 – 337	10		
	424 – 374	11	? Aldingbourne Raised Beach	Embayed coastline
	478 – 424	12		
	524 – 478	13	Westbourne/Arundel Raised Beach	Embayed coastline

Westbourne/Arundel Beach

2.5.6 The earliest sediments currently recognised within the Sussex and Hampshire coastal plain belong to the Westbourne/Arundel Raised Beach, some of which are associated with internationally significant Lower Palaeolithic archaeology.

2.5.7 The mapped extent of the Westbourne/Arundel Beach is beyond and east of the Project Boundary, extending from Westbourne Common to Arundel (Bates et al. 2010, Roberts and Pope 2018). However, the GDBA identified raised beach deposits which may be broadly contemporary with the Westbourne/Arundel Beach recorded on Portsdown Hill east of the Wallington River, south of the M27 (ApSimon et al. 1977, Bates et al. 2010) and to the south of the Project area.

2.5.8 The raised beach deposits on Portsdown Hill are not well understood. No Palaeolithic archaeology is known from these, however, a significant Lower Palaeolithic assemblage, including handaxes, was recovered from related Head deposits (see below) in the area at Red Barns, Porchester (Wenban-Smith et al. 2000).

Aldingbourne Beach

2.5.9 The Westbourne/Arundel Beach is post-dated by younger Pleistocene marine sediments assigned to the Aldingbourne Beach. Sediments assigned to Aldingbourne Beach are much more poorly researched than those of the Westbourne/Arundel Beach and it is possible that sediments assigned to this beach include more than one phase of marine transgression and regression.

2.5.10 The mapped west to east distribution of the Aldingbourne Beach within the Upper Coastal Plain is similar to that of the Westbourne/Arundel Beach (Bates et al. 2010, Roberts and Pope 2018), and therefore outside of the Project Boundary. Units of the Aldingbourne Beach occur along the line of the A27 between Chichester and Arundel (Fowler 1932, Calkin 1934, Shephard-Thorn et al. 1982, Bates 1998). The GDBA did not identify deposits equivalent to the Aldingbourne Beach in the Project area.

Brighton-Norton Beach

2.5.11 Pleistocene raised beach sediments post-dating those attributed to the Aldingbourne Beach have previously been found above 5m OD from Havant (Southleigh Park) in the west to Black Rock, Brighton in the east. These are attributed to the Brighton-Norton Beach. The GDBA and GLC recorded previously unidentified deposits of the Brighton-Norton Beach west of Stoneleigh Park, within the Project area (Wessex Archaeology 2023a). The GDBA and GLC (Wessex Archaeology 2023a) established that previously unrecognised raised beach deposits likely to belong to the Brighton-Norton Beach occur within the east of the Project Boundary in the Havant area.

2.5.12 Recorded sediments of the Brighton-Norton Beach have tended to consist of horizontally bedded, slightly gravelly, marine sands (Bates 1998, Bates et al. 2000). Detailed investigations have demonstrated that close to the palaeo-cliff line, at the northern extent of the sediments, regressive sequences occur. These have comprised marine sands that fined upwards to laminated estuarine sands, buried by low-energy fluvial sediments. A buried soil has been identified at the surface of the estuarine sands (Bates et al. 2010). Further south, the finer grained transgressive sediments are absent, with a major unconformity at the top of the marine sands.

2.5.13 Microfauna from sediments of the Brighton-Norton Beach have been studied from several localities (Bates 1998, Bates et al. 2010). These have consistently indicated deposition under cold conditions. OSL age estimates on units of the Brighton-Norton Beach at Norton Farm and Portfield Pit, Chichester suggests a late MIS 7 to MIS 6 date (Bates et al. 2010).

2.5.14 Relatively little Palaeolithic archaeology is currently known from the Brighton-Norton Beach sediments, although some artefacts have been recorded (Bates et al. 2007), and

contemporary occupation late in MIS 7 would be consistent with the early Middle Palaeolithic settlement history of southern Britain.

Pagham Beach

2.5.15 The youngest Pleistocene raised beach sediments recognised in the Sussex and Hampshire coastal plain are found at heights below 5m OD and belong to the Pagham Beach. Marine gravels of the Pagham Beach have been identified in modern foreshore cliff sections and in boreholes east of Havant (Bates et al. 2010). Sediments of the Pagham Beach are often clastic, high energy marine flint gravel and chalk debris. Finer grained, lower energy sediments do also occur, however. The GDBA and GLC (Wessex Archaeology 2023a) indicates that deposits belonging to the Pagham Raised Beach could occur within the east of the Project Boundary in the area of Budds Farm.

2.5.16 Units of the Pagham Beach have produced microfossil assemblages which contain similar cold indicator species to those obtained from the Brighton-Norton Beach (Bates et al. 2010). A key sequence of the Pagham Beach has been identified at Warblington, located 2km east of Budds Farm at the eastern end of the Project. The deposits of the Pagham Beach at Warblington contained silty sands that preserved a rich microfauna assemblage indicative of sand flats. The GDBA and GLC identified the potential presence of the Pagham Raised Beach within the south-east of the Project, in area of Budds Farm (Wessex Archaeology 2023a).

2.5.17 The Palaeolithic archaeological potential of deposits of the Pagham Beach is poorly understood. Several handaxes have been reported from findspots that are related to the Pagham Beach, including from overlying chalky gravels, but their condition suggests they are significantly reworked (Bates et al. 2007), and may be derived from earlier deposits.

Lower Coastal Plain Pleistocene freshwater deposits

2.5.18 Bedded chalky sediments have been identified infilling low points in the underlying chalk within the south-west of the Project boundary in the Budds Farm area (Wessex Archaeology 2023a). These deposits have undergone limited research, and their full distribution is poorly understood. The formation processes associated with these basins are also uncertain. As they occur in areas where the immediately underlying bedrock is chalk, they may be related to dissolution of chalk bedrock.

2.5.19 Similar deposits located east of the Project Boundary at Warblington preserved significant palaeoenvironmental evidence, including pollen, and extensive foraminifera and ostracod faunas (Bates et al. 2009). The Palaeolithic archaeological potential of these Pleistocene freshwater deposits has not been researched and is uncertain.

Pleistocene River Terrace Deposits

2.5.20 The Project Boundary crosses four rivers associated with Pleistocene river terraces, the Wallington River and Rivers Meon, Hamble and Itchen. The terraces of these rivers represent progressively younger former Pleistocene floodplains preserved at decreasing elevations through climatically influenced downcutting and crustal uplift (see Bridgland 2006).

2.5.21 The Rivers Meon, Hamble and Itchen today now all drain into Southampton Water but during the Pleistocene were all east bank tributaries of the River Test, which was itself a major drainage network of the Solent River system.

2.5.22 The modern Solent is a sea channel separating the Isle of Wight from southern England, but for most of its history it was a major river system that drained the Hampshire Basin and

the surrounding Chalklands. Its catchment area included large parts of Hampshire, Dorset, south Wiltshire and the Isle of Wight. Following extensive coastal erosion and eustatic Holocene sea-level rise, all that is visible terrestrially today of the Solent River system is the upper reaches of the Solent itself, now the River Frome, and its tributary rivers including the Stour, Avon, Test, Itchen, Meon, Hamble and Medina.

2.5.23 Pleistocene sediments associated with the Solent River drainage are some of the most complete geological records of the last 500,000 years, within which internationally significant Palaeolithic archaeological records are preserved. The current terrace stratigraphies and chronology of the major Solent drainage systems are summarised in **Table 4**.

Table 4 Comparative terrace stratigraphies of the Rivers Stour, Solent and Test

River Stour	Bournemouth Solent	Western Solent	River Test	Luminescence age estimates	Possible MIS correlations
			Lordswood Lane/West end		>13 (?26)
			Toot Hill/Netley Hill		>13 (?22)
			Castle Hill		>13 (?18)
			Midanbury/Rownham's Farm (Terrace 8)		>13 (?16-15)
		Holmsey Ridge	Bitterne (Terrace 7)		>13 (?14)
Terrace 13b	Terrace 13b	Sway	Nursling (Terrace 6)		?13-12
		Beaulieu Heath	Ganger Wood/Mallards Moor (Terrace 5)		?12
Terrace 13a	Terrace 13a	Setley Plain			?12-9
Terrace 12	Terrace 12	Mount Pleasant			?12-9
Terrace 11	Terrace 11	Old Milton	Belbin/Upper Warsash (Terrace 4)		?12-9
		Beckton Farm			?12-9
		Downton/ Tom's Down	Mottisfont/Lower Warsash (Terrace 3)	8	9-8
		Taddiford Farm			9-8
Terrace 10	Terrace 10	Stanwoods Bay	Hamble (Terrace 2) *	7-6	8-6
Terrace 9	Terrace 9	Milford on Sea (Lower)	?Broadlands Farm (Terrace 1)*	4	7-5
		Lepe			6
		Stone Point, Lepe			5e
		Milford on Sea (Upper)	?Broadlands Farm (Terrace 1)*	4	4-3
?Terrace 8		Pennington	?Broadlands Farm	4	6

River Stour	Bournemouth Solent	Western Solent	River Test	Luminescence age estimates	Possible MIS correlations
		(Lower)	(Terrace 1)*		
		Pennington Marshes			5e
		Pennington (Upper)	?Broadlands Farm (Terrace 1)*	4	5d-3

** Broadlands Farm terrace has only been traced as far down-stream as Southampton, whilst Hamble Terrace only traced upstream of Southampton. This likely this reflects presence of unmapped terraces beneath the modern Solent.*

2.5.24 Three of the four principal rivers that are crossed by the Project Boundary, the Itchen, Meon and Hamble, are tributaries of the River Test. Terraces of the River Test have produced thousands of Lower and Middle Palaeolithic artefacts that provide evidence for human occupation of the Solent region during the Lower and Middle Palaeolithic (Roe 1968, Wymer 1999, Ashton and Hosfield 2010, Davis 2013).

2.5.25 The pattern of Lower Palaeolithic activity within the Test river system is documented by occurrences of artefacts within different terraces. The earliest well documented evidence for human presence is from Midanbury/Rownham's Farm (Terrace 8) (Davis et al. 2016; 2021, Hatch et al. 2017). The specific age of these sediments is unknown but may range between MIS 16 to 13 (Westaway et al. 2006). Later terrace deposits across the Solent system contain widespread Lower Palaeolithic artefactual evidence, including large numbers of handaxes.

2.5.26 Evidence for Middle Palaeolithic activity with the Test catchment is marked by the appearance of artefacts produced by the Levallois flaking technique. The timing of the first appearance of this technological strategy is debated (see Westaway et al. 2006, Ashton and Hosfield 2010). Recent reviews (Ashton and Hosfield 2010, Davis 2013, Davies et al. 2021) have concluded that, whilst Levallois material is found amongst collections from Solent system terraces dating to as early as MIS 12 to 10, there is insufficient contextual evidence to be sure that this material is from the terraces themselves, as opposed to being from later, overlying deposits. Consequently, caution is required when considering the earliest appearance of Levallois in the Solent terraces. Based on well contextualised material, Davies et al. (2021) have concluded that the earliest secure evidence for Levallois core working is associated with the Belbin terrace of the River Test (?≥MIS 9).

2.5.27 The best documented early Middle Palaeolithic assemblage containing Levallois artefacts in the Test Valley is from Warsash (Burkitt et al. 1939). This site has fresh and slightly rolled Middle Palaeolithic artefacts, including artefacts reflecting Levallois core working. These may originate from the upper units or surface of the Lower Warsash terrace. This archaeology may date to late in MIS 8 or early in MIS 7 (Davis et al. 2016).

2.5.28 The later Middle Palaeolithic in the Test valley is less well understood. Concentrations of chance finds of typo-technologically diagnostic late Middle Palaeolithic (Boute coupé) handaxes from the Southampton area (Cutler 2013) demonstrate human activity during this period. Where chronology is available, such handaxes tend to be dated to early MIS 3 (White and Jacobi 2002). Additionally, recent investigation within the wider Solent catchment at Great Pan Farm, Isle of Wight indicates a human presence both during MIS 4/3 and also earlier in MIS 5d-5a (Wessex Archaeology 2023c). The latter is particularly significant as MIS 5d-5a, the early Devensian, is often described as a period lacking evidence for humans in Britain (e.g. Ashton and Lewis 2002). The new Great Pan Farm evidence, supported by extant evidence from elsewhere (Wenban-Smith et al. 2010) suggests that this is not the case. The Great Pan Farm archaeology also demonstrates that

the Solent system is a key region for investigating later Middle Palaeolithic activity and settlement history in southern Britain.

2.5.29 Palaeoenvironmental records are rare from terraces in the Solent system and the deposits of the Test are generally unfossiliferous. However, evidence from the wider drainage system demonstrates that where suitable conditions locally occur, significant organic and fossiliferous sediments can be present (Barber and Brown 1987, Allen et al. 1996, Briant et al. 2009, Briant et al. 2013).

2.5.30 In comparison to the Test, the Pleistocene terraces of the Meon, Hamble and Itchen are poorly mapped and lack chronology. Of the three, the terraces of the Itchen are the most consistently recorded with up to five terraces located above the modern floodplain (Edwards and Freshney 1987). Multiple terraces are also identified by the BGS for the Meon and Hamble with terraces numbered up to 7 recorded for both (BGS GeoIndex). However, the number and mapping of these terrace outcrops is inconsistent. No deposits associated with terraces of the Meon, Hamble and Itchen have been dated.

2.5.31 Similarly, the Palaeolithic archaeological records associated with these rivers is poorly understood, having been little researched. Hints at archaeological potential are provided by 19th century finds of Palaeolithic artefacts from the Itchen, which include 65 handaxes and a Levallois flake from a gravel pit quarrying Terrace 3 at Colden Common and ten handaxes from a pit cut into Terrace 4 at Chandlers Ford (Davies 2013). The presence of the Middle Palaeolithic Levallois flake from Colden Common may provide some chronology; based on evidence for the first appearance of Levallois in the wider Solent catchment (see above), it may indicate that Terrace 3 is younger than MIS 9.

2.5.32 The other river with Pleistocene river terraces in the Scoping Area, the Wallington River, drains through Fareham and Portsdown Hill at the western end of the Portsdown Anticline into Portsmouth Harbour. During the Pleistocene the river likely drained directly into the Solent River in the area east of the Isle of Wight. The BGS map up to 7 terraces of the Wallington River (BGS GeoIndex). These terraces have undergone little investigation, and their age and archaeological potential is unknown.

Sediments infilling solution features

2.5.33 The Project Boundary crosses two areas of chalk upland, Portsdown Hill and the edge of the South Downs at Otterbourne. Chalk forming these landscapes is subject to dissolution through infiltration by weak carbonic acid, which flows through fractures dissolving the wall rock and causing them to widen, creating a range of solution features (dolines/hollows, pipes etc.). The GDBA and GLC identified potential solution features on Portsdown Hill in areas adjacent to the Project Boundary (Wessex Archaeology 2023a). The presence of possible solution features with surface expression may be indicative of solution features located within the Project Boundary which are not visible.

2.5.34 The process of chalk dissolution is ongoing and stochastic with solution features forming during both the Pleistocene and Holocene periods. These solution features act as capture points for Pleistocene and Holocene sediment that have been protected from subsequent erosion in what are otherwise highly erosive landscapes. Solution features can also be foci for Palaeolithic and later prehistoric activity, with deposits within them preserving significant, including *in situ*, lithic scatters. Deposits within solution features can preserve paleoenvironmental evidence. If calcareous deposits are present, deposits within solution features can contain vertebrates and molluscs. Additionally, they can include buried soils preserving other palaeoenvironmental evidence, such as pollen.

2.5.35 In the Otterbourne area Clay-with-Flints is mapped by the BGS overlying chalk bedrock. Clay-with-Flints (sensu stricto) is a deposit derived from the in-situ dissolution, decalcification and cryoturbation of chalk and overlying Palaeogene (55–23 Ma) deposits. It is a product of cumulative in situ post-Paleogene weathering. Clay-with-Flints (sensu lato) includes not only this parent material, but sediments incorporating exogenous Pleistocene loessic and/or colluvial material. This can include Pleistocene and Holocene sediments that infill solution features within the underlying chalk. The key archaeological significance of areas of Clay-with-Flints is that they are indicative of parts of chalk landscapes that have been protected from extensive weathering and erosion during the Pleistocene and Holocene and are indicative of areas where capture points such as solution features preserving Quaternary sediments containing archaeology can occur.

Pleistocene Head Deposits

2.5.36 Head deposits are recorded by the GDBA and GLC within the Project Boundary overlying raised beach and river terrace deposits, as well as on slopes directly overlying bedrock. (Wessex Archaeology 2023a).

2.5.37 Head is a banner term for a range of Pleistocene sediments deposited through different processes. Where fine-grained units dominate, such deposits are often collectively referred to as ‘Head-Brickearth’ or simply ‘Brickearth’.

2.5.38 Head deposits recorded to date in the Project Boundary are sediments that have been reworked downslope (Slope Deposits) in periods associated with landscape instability. In Pleistocene contexts this instability is climatically and environmentally driven, with cold periods associated with a lack vegetation cover providing the most suitable conditions for deposition of such slope deposits. Depositional processes within such slope deposits can include colluviation, water run-off and, in periglacial environments, seasonal freeze-thaw processes (e.g. solifluction).

2.5.39 Head sequences can also include Pleistocene wind-blown sediments. Wind-blown sediments (Loess/Coversands) are deposited in periglacial environments with silt (loess) or sand (Coversands) sized particles from exposed unconsolidated parent sources that have been redeposited across landscapes. Sequences of Pleistocene wind-blown sediments often reflect periodic aeolian deposition between which stable landsurfaces, including buried soils, can form.

2.5.40 The Head deposits within the Project Boundary are undated. Deposits recorded as Head are generally considered to date to the Pleistocene, but where chronology is absent (for example in the form of contained archaeology) they often include Holocene colluvium. This reflects the fact that both are often slope deposits deposited through a similar range of processes, although the causal factors resulting in Holocene colluviation include human landscape modification (see below).

2.5.41 Slope deposits within Pleistocene Head can contain and bury stable horizons associated with minimally disturbed/in-situ Palaeolithic archaeology. Slope deposits themselves can incorporate material reworked downslope within the sediment body, which may in turn be indicative of focusses of activity further upslope. Similarly, aeolian sediments and finer-grained alluvial sediments within Head sequences can contain stable surfaces and buried soils associated with minimally disturbed/in-situ Palaeolithic archaeology.

2.5.42 Decalcified Head sequences have low potential to preserve palaeoenvironmental evidence. Head deposits located within the Project boundary, where the underlying bedrock is Palaeogene sediments, are likely to be calcareous. Calcareous sequences are most likely

to occur within areas within the Project Boundary where the underlying bedrock is chalk. Calcareous Head deposits can preserve significant mollusc and vertebrate faunas. Buried soils within Head sequences could preserve significant palaeoenvironmental records.

Holocene alluvium

2.5.43 Holocene alluvium is present in the Project Boundary within the valleys of the Hermitage Stream, Wallington River and Rivers Meon, Hamble and Itchen, and some of their tributaries). Holocene alluvium is a generalised term covering unconsolidated sediment transported by water in a non-marine environment (e.g. rivers). It has also been used as a banner term including other sediment such as peat, but that often occur as distinct bands or discrete features within alluvium. Alluvium will therefore be encountered within both active rivers and floodplains and the fills of former river channels (termed palaeochannels). Both floodplain alluvium and palaeochannels are key contexts for the preservation of waterlogged archaeology.

2.5.44 Three sets of Holocene alluvial sediments were recognised in the GDBA and GLC (Wessex Archaeology 2023a) within the Project EIA Scoping area:

- Minerogenic sediments
- Peats
- Tufa

2.5.45 Minerogenic alluvial sediments are located within river valleys crossed by the Project Boundary. Such alluvial sediments can bury archaeological features and layers, particularly where changes in drainage result in floodplain stabilisation and associated activity, which is subsequently sealed by a reversion to active alluvial deposition. Although it contains palaeoenvironmental remains such as pollen and plant macrofossils, these are often poorly preserved and of uncertain source area, transported fluvially over potentially large areas of the wider catchment. Holocene alluvium also lacks suitable material of secure context for radiocarbon dating.

2.5.46 Peat could occur within Holocene alluvial sequences crossed by the Project Boundary. Peat comprises partially decomposed organic matter preserved within waterlogged anaerobic (oxygen-free) conditions. The archaeological potential of peat deposits is high as they can preserve organic remains not otherwise generally preserved. Peat also contains a range of botanical remains (e.g. pollen and plant macrofossils) preserved in the waterlogged anoxic (oxygen-free) conditions, representing important archives of information on past climate and palaeoenvironmental change and the impact of human communities on the landscape.

2.5.47 Tufa is a secondary deposit of calcium carbonate which accumulates on precipitation from emergent spring waters (Thorpe et al. 1980) and is commonly considered to be associated with formation in warm, wet conditions. Holocene tufas are particularly, though not exclusively, associated with the Mesolithic period. Tufa is often recorded around springs though it may reflect a range of fluvial processes. Due to the highly calcareous nature of tufa, it has a high potential to preserve vertebrate and molluscan remains. Direct dating of tufa can be problematic owing to the lack of suitable organic preservation.

2.5.48 The GDBA and GLC determined that calcareous tufas could only occur at the west end of the Project within the EIA scoping area at Otterbourne where the River Itchen crosses outcropping chalk, which is the source of the calcium carbonate in the tufas (Wessex Archaeology 2023a). This is the furthest known southerly extent of tufa deposits within the

Holocene alluvium in the Itchen Valley (Edwards and Freshney 1987). Only the north part of the western end of the Project boundary is within this are where tufas could be present.

Holocene colluvium

2.5.49 Holocene colluvium is a Slope Deposit which occurs in areas of topographical relief crossed by the Project Boundary (slopes and valleys) where soil instability has led to downslope movement of sediments. Generally, this instability is considered to have been brought on by activities such as clearance of woodland, agricultural activity and soil degradation. Environmental factors can also influence the formation of Holocene colluvium. Likely Holocene colluvium was identified along valley margins located within the Project Boundary by the GDBA and GLC (Wessex Archaeology 2023a).

2.5.50 Holocene colluvial sediments can contain reworked artefacts of multiple dates. It can also bury archaeological features and layers. As with Pleistocene Head sequences, calcareous Holocene colluvial sequences on chalk can preserve molluscs and vertebrate remains, whilst buried soils within or sealed by colluvium can contain important pollen records.

Surface archaeology

2.5.51 In addition to the geoarchaeological resource located within these Quaternary geological deposits, significant potential for archaeological features and layers overlying and cut into the Quaternary and bedrock deposits within the Project Boundary has also been identified (Royal HaskoningDHV 2022, 2023).

2.5.52 Baseline assessment of this potential utilising Hampshire and Winchester Historic Environment Records (HER) (Royal HaskoningDHV 2023) noted that at the south-eastern end of the Project, along Portsdown Hill, there is a potential for significant late prehistoric remains. Additionally, a large number of cropmarks are recorded to the west of Portsdown Hill towards Knowle, which may represent archaeological features of unknown date. Further west, west of Wickham, the routes of two Roman roads, including the Chichester to Bitterne Roman road occur, which indicate potential for associated archaeology and settlement. Towards the north-west end, the Project passes through a historic deer park associated with the scheduled Park Pale at Marwell, a medieval fishpond complex, where well-preserved earthworks of unknown date are recorded.

3 AIMS AND OBJECTIVES

3.1 Introduction

3.1.1 The aims and objectives of the archaeological and geoarchaeological monitoring of GI works follow those outlined within the WSI (Royal HaskoningDHV 2022, 2023, 2024).

3.2 Overarching aims

3.2.1 The general aims (or purpose) of the work, as listed in the WSI, were to:

- monitor the excavation of GI trial pits, and to identify, investigate and record any significant buried archaeological deposits revealed;
- monitor, log and record the sequence of GI boreholes in areas where it has been agreed with the Historic Environment consultees that specialist geoarchaeological monitoring is necessary at locations with a higher potential for the presence of palaeoenvironmental remains;
- review all other borehole logs, once available from the GI Contractor, for the recorded presence of any material/deposits of potential geoarchaeological or

palaeoenvironmental significance and to provide recommendations for any proportionate geoarchaeological/palaeoenvironmental assessment;

- obtain representative samples from suitable deposits;
- produce an integrated archive of the project work and associated report setting out the results of the monitoring and any archaeological and geoarchaeological/palaeoenvironmental conclusions that can be drawn from the recorded data; and
- deposit the site archive with an appropriate museum and to provide information for accession to the Hampshire HER and Winchester HER.

3.3 Overarching objectives

3.3.1 The objectives of the work, as listed in the WSI, were to:

- attend site and monitor the GI works, including all trial pits and boreholes listed in the WSI (Royal HaskoningDHV 2022, 2023, 2024);
- describe and interpret the sequences and place them within their wider geoarchaeological context;
- undertake a programme of geoarchaeological deposit modelling;
- arrange the taking of appropriate samples for further investigation with the GI Contractor, and
- make specific recommendations for further work, taking into account key research questions and objectives outlined in the Archaeological Strategy for Hampshire (Hampshire County Council 2018).

4 FIELDWORK METHODS

4.1 Introduction

4.1.1 All works were undertaken in accordance with the detailed methods set out within the WSI (Royal HaskoningDHV 2022, 2023, 2024).

4.1.2 Interventions subject to archaeological, geoarchaeological and both archaeological and geoarchaeological monitoring were as identified in the WSI (Royal HaskoningDHV 2022, 2023, 2024). The interventions subject to monitoring are summarised in **Appendix 1**.

4.2 Archaeological monitoring

Monitoring

4.2.1 Selected machine dug trial pits and hand dug borehole starter pits were subject archaeological monitoring. These were excavated by the GI contractor and monitored by a suitably qualified archaeologist.

4.2.2 Excavations of machine dug trial pits proceeded with a toothless ditching bucket under the direction of the GI engineering site supervisor. During the excavation of machine dug trial pits and hand dug starter pits for boreholes the attending geoarchaeologist checked for the presence of archaeological features and finds. Arisings from each monitored GI intervention were visually scanned for artefacts and ecofacts.

Recording

4.2.3 No archaeological deposits or features were identified or recorded.

4.2.4 The monitored GI interventions were recorded using Wessex Archaeology's pro-forma digital recording system. For each stratigraphic unit descriptions and interpretations of the geological deposits were provided. Descriptions of deposits included information such as:

- Depth
- Texture
- Composition
- Colour
- Inclusions
- Structure
- Shape and nature of contacts between deposits

4.2.5 Interpretations included, where possible, probable depositional environments and formation processes.

4.2.6 A full photographic record was made using digital cameras equipped with an image sensor of not less than 10 megapixels. Digital images were subject to managed quality control and curation processes, which embed appropriate metadata within the image and ensures long term accessibility of the image set.

4.3 Geoarchaeological monitoring

Monitoring

4.3.1 An experienced member of the Wessex Archaeology geoarchaeology team monitored the GI works. The attending geoarchaeologist liaised closely with the geotechnical team in order to ensure effective communication was maintained throughout the works.

4.3.2 The supervising geoarchaeologist recorded and interpreted the sequence of deposits encountered in order to allow assessment of likely geoarchaeological potential.

Recording

4.3.3 The monitored GI interventions were recorded using Wessex Archaeology's pro-forma digital recording system. For each stratigraphic unit descriptions and interpretations of the deposits are provided. Descriptions of deposits included information such as:

- Depth
- Texture
- Composition
- Colour
- Inclusions
- Structure
- Shape and nature of contacts between deposits

4.3.4 Interpretations included, where possible, probable depositional environments and formation processes.

4.3.5 For each monitored trial pit, a representative sketch section of at least one face was made.

4.3.6 A full photographic record was made using a digital camera equipped with an image sensor of not less than 10 megapixels. This recorded both the detail and the general context of the principal lithological and stratigraphic features.

4.3.7 Digital images were subject to managed quality control and curation processes which will embed appropriate metadata within the image and ensure long term accessibility of the image set.

Paleoenvironmental review and sampling

4.3.8 The potential for Quaternary deposits to preserve paleoenvironmental and dating evidence was assessed by the monitoring geoarchaeological specialist. The palaeoenvironmental and dating potential of deposits monitored was generally low, but localised deposits with higher potential were identified. In most instances the geotechnical investigative techniques limited opportunities for the recovery of samples suitable for geoarchaeological assessment, but a small number of bulk samples were taken in accordance with the methodology outlined in the WSI (Royal HaskoningDHV 2022, 2023).

5 POST-EXCAVATION METHODS

5.1 Stratigraphic evidence

5.1.1 All written and drawn records from the monitoring have been collated and checked for consistency. Where possible, probable depositional environments, formation processes and chronostratigraphic context have been considered.

5.1.2 A written description was made of all geoarchaeological deposits, ordered by intervention and lithostratigraphy. Details of all lithostratigraphic contexts are provided in tables in **Appendices 2**–**4**.

5.2 Review of GI logs

5.2.1 As part of the monitoring all stratigraphic logs from the Phase 1, Phase 2 and Phases 3a–3c GI works were subject to geoarchaeological review. These logs were combined with Phase 0 GI records and a review of British Geological Survey (BGS) archive boreholes (BGS GeoIndex) from within 1km study area of the Project's EIA scoping area.

5.2.2 The combined dataset has been used to provide an assessment of the Quaternary deposits within the Project Boundary.

5.2.3 The deposit records reviewed are summarized as follows:

- Phase 0 Project GI data (11 records);
- Phase 1 Project GI data (34 records);
- Phase 2 Project GI data (42 records),
- Phase 3a Project GI data (14 records),
- Phase 3b Project GI data (70 records),
- Phase 3c Project GI data (90 records), and
- BGS borehole records (BGS GeoIndex; 187 records).

5.2.4 The log review was undertaken by a suitably qualified geoarchaeologist, with an assessment of the quality of the sediment descriptions and a geoarchaeological interpretation of the deposits cross-referencing the GI locations with nearby monitored interventions, existing BGS mapping and their topographic context.

5.3 Geoarchaeological deposit modelling

5.3.1 An initial geoarchaeological deposit model for the Project EIA scoping area was produced for the GDBA and GLC (Wessex Archaeology 2023a). This included available data from Phases 1 and 2 of the GI monitoring. This deposit model has been updated to include data from all phases of the geoarchaeological monitoring providing an assessment of the deposits present within the Project Boundary.

5.3.2 Deposit modelling identifies the range of Quaternary deposits that may be present in a defined area and maps their lateral extent and depth. The deposit modelling has been carried out in accordance with *Deposit modeling and archaeology: guidance for mapping buried deposits* (Historic England 2020).

5.3.3 Only lithostratigraphic records with sufficiently detailed descriptive terminology and location data (including surface elevation) were included in the model. In total 447 deposit records were used in the deposit modelling. These are listed in **Appendix 5** and their locations illustrated on **Figures 6**, **8**, **20**, **23**, **27**, **29**, **31**, **33** and **35**.

5.3.4 All available data points were entered into industry standard geological utilities software (Rockworks™). Each stratigraphic unit was given a colour and pattern allowing cross correlation and grouping of the different sedimentary units. The grouping of these deposits is based on lithological descriptions, which define distinct depositional environments referred to as ‘stratigraphic units’ (e.g., Bedrock, Alluvium and Made Ground).

5.3.5 Outputs include two-dimensional stratigraphic profiles (‘transects’) of selected interventions, and models of surface height and/or thickness generated using an inverse-distance weighted (IDW) algorithm for the stratigraphic units present within the study area. All modelling was undertaken using RockWorks™.

5.3.6 Where data points are not uniformly distributed over the area of investigation the reliability of the outputs is variable. In order to account for this, the modelling algorithm has been adjusted to include a maximum distance cut-off filter, so that only those areas for which sufficient stratigraphic data is present will be included in the model. A maximum distance cut-off filter equivalent to a 50m radius around each data point is applied to the outputs.

5.4 Finds evidence

5.4.1 No archaeological finds were made during the monitoring.

5.5 Palaeoenvironmental potential

5.5.1 The potential of all Quaternary geological units identified during GI works to preserve significant paleoenvironmental evidence has been reviewed, either through direct monitoring or log review, and assigned either a high, medium or low priority status based on their perceived geoarchaeological potential. The results of this review are provided in **Appendix 6**. Deposits assigned high and medium status would be suitable for sampling for palaeoenvironmental assessment.

5.5.2 Opportunities for sampling of deposits assigned high or medium priority status during GI monitoring was limited. This is due to such deposits being recorded in GI logs from

interventions not selected for monitoring (Royal HaskoningDHV 2022, 2023, 2024) and the geotechnical investigative techniques providing limited opportunity for the recovery of samples suitable for geoarchaeological assessment. A small number of geoarchaeological sediment samples suitable for palaeoenvironmental assessment were obtained during the monitoring (**Appendix 7**).

6 RESULTS

6.1 Introduction

6.1.1 This section outlines the results of the GI monitoring. It includes summaries of the deposits, identifies sedimentary units that would be suitable for palaeoenvironmental assessment and dating, assigning them a high, medium or low priority status, and records both the approaches to sampling and the samples taken. No archaeology was identified during the monitoring.

6.1.2 The results of the GI monitoring are presented within the framework provided by the previous Geoarchaeological Desk-based Assessment (GDBA) and Geoarchaeological Landscape Characterisation (GLC) (Wessex Archaeology 2023a). This divided the Project's EIA Scoping Area into 28 Geoarchaeological Character Zones (GCZs) (**Figure 2**). The Project Boundary and GI interventions are located within select GCZs, as summarised in **Table 5**.

Table 5 Geoarchaeological Character Zones (Wessex Archaeology 2023a)

GCZ	Name	Landscape features	Principal Quaternary deposits	Within Project Boundary?	GI interventions
1a	Havant Thicket	Areas of high ground overlooking dry valley system in Thicket Bottom - Stockheath	None	Yes	No
1b	West Leigh			Yes	Yes
2	Thicket Bottom - Stockheath	Dry valley system and minor watercourse that forms north bank tributary of Hermitage Stream	Pleistocene Head / Holocene Colluvium	Yes	Yes
3	Bell's Copse	Valley and minor watercourse that forms north bank tributary of Hermitage Stream	Pleistocene Head / Holocene Colluvium	Yes	No
4a	Hermitage Stream North	Valley of the Hermitage Stream	Holocene Alluvium	Yes	Yes
			Pleistocene Head / Holocene Colluvium		
4b	Hermitage Stream North	Valley of the Hermitage Stream	Holocene Alluvium	Yes	No
			Pleistocene Head / Holocene Colluvium		
5a	Havant West		Pleistocene Head	No	No

GCZ	Name	Landscape features	Principal Quaternary deposits	Within Project Boundary?	GI interventions
		East of valley of Hermitage Stream	Pleistocene Raised Beach Deposits		
5b	Bedhampton East	West of valley of Hermitage Stream	Pleistocene Head	Yes	Yes
			Pleistocene Raised Beach Deposits		
5c	Farrington East	Southern slope of Portsdown Hill	Pleistocene Head	Yes	Yes
			Pleistocene Raised Beach Deposits		
6	Brockhampton – Budds Farm	Confluence of Hermitage Stream and Brockhampton Stream in west of Langstone Harbour	Alluvium	Yes	Yes
			Clays		
			Gravelly Clays		
			Gravels		
			Chalky Silts and Gravels		
7	Portsdown Hill Road	Southern slope of Portsdown Hill	Pleistocene Head	Yes	Yes
			? Pleistocene Raised Beach Deposits		
8	Portsdown Hill	Chalk ridge with dry valleys incised through northern slopes which form southern side valleys of main valley of Wallington River	Pleistocene Head / Holocene Colluvium	Yes	Yes
			Pleistocene and/or Holocene deposits within solution features		
9	Wallington River East	Upper valley of the Wallington River	Holocene Alluvium	No	No
			Pleistocene Head / Holocene Colluvium		
			Pleistocene River Terrace Deposits		
10	Staple Cross Copse	Interfluve between north bank dry side valleys of the Walling River Valley	None	No	No
11	Priors Hold Farm	Valley and minor watercourse that forms north bank tributary of the Wallington River	Pleistocene Head / Holocene Colluvium	No	No

GCZ	Name	Landscape features	Principal Quaternary deposits	Within Project Boundary?	GI interventions
12	Wallington River West	Valley of the Wallington River	Holocene Alluvium	Yes	Yes
			Pleistocene Head / Holocene Colluvium		
			? Pleistocene and/or Holocene deposits within solution features		
			Pleistocene River Terrace Deposits		
13	Wickham Common	Interfluve between Wallington River and River Meon	None	No	No
14	Funtley	Interfluve between Wallington River and River Meon	? Pleistocene and/or Holocene deposits within solution features	No	Yes
15	River Meon	Valley of the River Meon	Holocene Alluvium	Yes	Yes
			Pleistocene Head / Holocene Colluvium		
			Pleistocene River Terrace Deposits		
16	Redhill Copse	Interfluve between Meon Valley and dry valley belonging to upper catchment of the River Hamble	None	Yes	Yes
17a	Hilldale Farm	Head of dry valley which develops into of east bank tributary of the River Hamble	?Holocene alluvium	No	No
			Pleistocene Head / Holocene Colluvium		
17b	Cloverfield Farm	Head of dry valley which develops into of east bank tributary of the River Hamble	?Holocene alluvium	Yes	Yes
			Pleistocene Head / Holocene Colluvium		
18	Shirrell Heath	Interfluve between valleys of tributaries of River Hamble	None	Yes	Yes
19	Kitnocks Gully	Upper valley of Kitnocks Gully, an east bank tributary of the River Hamble	Holocene Alluvium	Yes	Yes
			Pleistocene Head / Holocene Colluvium		
20	Clewers Hill	Interfluve between valleys of tributaries of River Hamble and the	None	Yes	Yes

GCZ	Name	Landscape features	Principal Quaternary deposits	Within Project Boundary?	GI interventions
		valley of the River Hamble			
21	River Hamble	Valley of the River Hamble	Holocene Alluvium	Yes	Yes
			Pleistocene Head / Holocene Colluvium		
			Pleistocene River Terrace Deposits		
22a	Winters Hill West	West bank tributary of River Hamble	Holocene Alluvium	Yes	Yes
22b	Winters Hill East			No	No
23	Park Hill	Interfluve between River Hamble and Bow Lake stream	None	Yes	Yes
24	Fisher's Pond	Valley of the Bow Lake Stream and valley of Fisher's Pond	Holocene Alluvium	Yes	Yes
			Pleistocene Head / Holocene Colluvium		
25	Nobbs Crook	Interfluve between Bow Lake Stream and River Itchen	? Holocene colluvium	Yes	Yes
26	Itchen Valley	Valley of the River Itchen	Holocene Alluvium	Yes	Yes
			Pleistocene Head		
			Pleistocene River Terrace Deposits		
27	Otterbourne	Southern edge of South Downs	Pleistocene Head / Holocene Colluvium?	Yes	Yes
			? Pleistocene deposits within solution features		
			Pleistocene River Terrace Deposits		
28	Otterbourne Hill	High ground west of the Itchen Valley	None		

6.2 GCZ 1b

Introduction

6.2.1 GCZ 1a and 1b are areas of high ground overlooking dry valley systems in Thicket Bottom and Stockheath (**Figure 6**). No GI interventions were located in GCZ 1a.

6.2.2 Five GI interventions were located in GCZ 1b (**Table 6**), four located together in the north, close to the boundary with to GCZ 2, with the fifth (BH107) located further to the south (**Figure 5**). The interventions in the north (BH108, TP110–112) were identified for archaeological monitoring (Royal HaskoningDHV 2022, 2023).

Table 6 GI interventions in GCZs 1a and 1b

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
BH108	60.0	1	1b	Archaeological	Slope Deposits (Head)	0.28–1.20	
BH107	30.5	1	1b	None	Alluvium	0.20-0.60	
					Slope Deposits (Head)	1.20-3.70	
TP110	4.0	1	1b	Archaeological	Slope Deposits (Head)	0.40–3.10	
TP111	4.0	1	1b	Archaeological	Slope Deposits (Head)	0.40–3.20	
TP112	4.0	1	1b	Archaeological	Slope Deposits (Head)	0.40–3.60	

Deposits

6.2.3 GI interventions in GCZ 1b identified Quaternary sediments comprising slope deposits and alluvial sediments belonging to a tributary of the Hermitage Stream.

6.2.4 The four monitored interventions in the north of the zone (BH108, TP110–112) recorded bedrock overlain by Slope Deposits (Head). The bedrock comprised stiff sandy clays and mudstone with selenite fragments belonging to the London Clay Formation. Up to c. 3.0m of Slope Deposits (Head) was recorded, which consisted of soft to firm sandy clays, sometimes with gravelly units of reworked mudstone. The Slope Deposits were generally divisible into upper, softer sandy clays and lower, stiffer sandy clays. These separate stratigraphic units are indicative of more than a single period of deposition. The Slope Deposits occurred below topsoil.

6.2.5 The results of the deposit modelling, illustrated through a west to east transect (**Figure 6**), demonstrates these Slope Deposits are located on the western slopes of a valley system that extends to the to the west, across Thicket Bottom (GCZ 2). The age of this valley system and the slope deposits in GI interventions are unknown. It is likely that they comprise both Pleistocene Head and Holocene Colluvium, deposited through similar slope processes. The bipartite division between upper softer and lower firmer sandy clay units may reflect this division, with Pleistocene Head deposits overlain by Holocene Colluvium.

6.2.6 A single unmonitored intervention in the south of the zone (BH107) recovered a sequence of dense silty sand bedrock of the Bognor Member of the London Clay Formation, overlain by Quaternary deposits compromising medium dense silty fine sands (1.20–3.70m below

ground level (bgl)), clayey sandy gravel (0.60–1.20m bgl), slightly sandy, slightly gravelly silty clays (0.20-0.60m bgl) and topsoil.

6.2.7 The silty fine sands (1.20–3.70m bgl) are likely Slope Deposits reworking the underlying sands of the Bognor Sand Member bedrock. Although interpreted as Head Deposits in GI logs, the overlying clayey sandy gravel (0.60 –1.20m bgl) and the silty clays (0.20–0.60m bgl) are more characteristic of alluvial sediments. They are composed of a course, high energy fluvial gravel (clayey sandy gravel) overlain by floodplain alluvium (silty clays). These alluvial deposits likely belong to a watercourse located to the north of BH107, in GCZ 2. This watercourse drains Thicket Bottom and is a north bank tributary of the Hermitage Stream

6.2.8 The Slope Deposits are located along the edges of the valley containing this stream. They are undated and could be Pleistocene or Holocene in age. The floodplain alluvium will date to an unknown period of the Holocene, whilst the underlying sands ang gravels either date to a period in the late Pleistocene or the Holocene.

Archaeology

6.2.9 Monitoring of BH108 and TP110–112 did not identify any archaeology.

Palaeoenvironmental potential

6.2.10 Monitoring and review of GI logs did not identify any geoarchaeological deposits with palaeoenvironmental potential. All units were assigned low palaeoenvironmental priority status. No palaeoenvironmental samples were taken during monitoring.

6.3 GCZ 2

Introduction

6.3.1 GCZ 2 contains a valley system with streams that coalesce in the south of the zone to form a north bank tributary of the Hermitage Stream (**Figure 6**). The zone extends from Thicket Bottom in the north, southwards to where the valley system and tributary joins the Hermitage Stream at Stockheath. One GI intervention (BH109) was located in GCZ 2 (**Table 7**).

Deposits

6.3.2 BH109 was situated in the east of the zone (**Figure 5**), close to interventions in GCZ 1b (BH108, TP110–112), and was selected for archaeological monitoring (Royal HaskoningDHV 2022, 2023).

Table 7 GI interventions in GCZ 2

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl)	Notes
BH109	18.5	1	2	Archaeological	Slope Deposits (Head)	0.60–1.20	

6.3.3 The deposits recorded in BH109 consisted of London Clay Formation Bedrock (stiff clays) overlain by a sequence (0.60–1.20m bgl) of Slope Deposits comprising firm sandy clays, pockets of sand and some angular to sub-angular fine to medium flint clasts, overlain by softer (and in this case gravely) clays. **Figure 7** illustrates that these are the downslope,

westward continuation of the Pleistocene/Holocene Slope Deposits identified to the east in GCZ1b (BH108, TP110–112; see **Section 6.1**).

6.3.4 Alluvial deposits belonging to the tributary stream were recorded in BH107, located to the south of the GCZ 2 boundary within GCZ 1b (see **Section 6.2**).

Archaeology

6.3.5 Monitoring of BH109 did not identify any archaeology.

Palaeoenvironmental potential

6.3.6 The Slope Deposits identified in BH109 have low palaeoenvironmental potential and were assigned a low palaeoenvironmental priority status (see **Appendix 6**). No palaeoenvironmental samples were taken during monitoring.

6.4 GCZ 3

6.4.1 GCZ 3 is defined by a north-south orientated valley containing a minor watercourse that forms a north bank tributary of the Hermitage Stream (**Figure 6**). The zone is located within the Project Boundary but did not contain any GI interventions.

6.5 GCZs 4a and 4b

Introduction

6.5.1 The Project Boundary crosses both GCZ 4a and 4b, which comprise the valley of the Hermitage Stream (**Figure 8**). One GI intervention, BH106, was located in the north of GCZ 4a (**Figure 7**).

Deposits

6.5.2 BH106 was not monitored, but the GI log records 4.30m of Quaternary sediments (**Table 8**) that were lithologically similar to the Slope Deposits identified in monitored interventions in GCZs 1b and 2 (see above). Those in BH106 were divisible into three stratigraphic units, indicating multiple phases of deposition. These may include units dating to both the Pleistocene and Holocene. They are part of sequences of Slope Deposits present along the slopes of the valley containing the Hermitage Stream. Further south in GCZ 4a a BGS deposit record (SU70NW69) contains 0.8m of sandy gravelly alluvium overlying possible Slope Deposits.

Table 8 GI interventions in GCZ 4a

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl)	Notes
BH106	30.0	1	4a	No	Slope Deposits (Head)	0.50–4.80	

Palaeoenvironmental potential

6.5.3 The Slope Deposits recorded in BH106 are likely to be decalcified, with limited palaeoenvironmental potential and have been assigned a low priority status (see **Appendix 6**).

6.6 GCZs 5b and 5c

Introduction

6.6.1 Zone 5b is located west of the Hermitage Stream, whilst GCZ 5c is located further to the west, along the lower slopes of Portsdown Hill north of Langstone Harbour (**Figure 8**). No GI locations were in GCZ 5a.

6.6.2 Six GI interventions were in GCZ 5b and one in GCZ 5c (**Table 9**). No GI interventions in these zones were selected for monitoring (Royal HaskoningDHV 2022, 2023).

Deposits

6.6.3 Although BGS mapping records undifferentiated Pleistocene River Terrace Deposits and Head in GCZs 5b and 5c (**Figure 8**), previous review of data in the GDBA and GLC (Wessex Archaeology 2023a) demonstrated that geoarchaeologically significant sequences of Pleistocene Raised Beach Deposits are present.

6.6.4 Geoarchaeological review of GI logs demonstrates that Raised Beach Deposits were present in five GI interventions, with Slope Deposits (Head) present in seven (**Table 9**). The stratigraphic relationships between these deposits are illustrated in a deposit model transect (**Figure 9**).

Table 9 GI interventions in GCZ 5b and 5c

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl)	Notes
BH101	30.3	1	5b	No	Slope Deposits (Head)	0.55–1.20	
					Possible Raised Beach Deposits	1.20–2.10	
BH102	7.0	1	5b	No	Slope Deposits (Head)	0.30–1.20	
BH102A	50.3	1	5b	No	Slope Deposits (Head)	0.30–1.20	
BH103	40.2	1	5b	No	Slope Deposits (Head)	0.10–1.05	
					Raised Beach Deposits	1.05–3.35	
BH104	55.0	1	5b	No	Slope Deposits (Head)	0.35–1.20	
					Raised Beach Deposits	1.20–5.00	
BH105	35.0	1	5b	No	Slope Deposits (Head)	0.50–1.20	
					Raised Beach Deposits	1.20–7.20	

BH202	59.8	1	5c	No	Slope Deposits (Head)	2.50–4.72	Overlain by Made Ground
					Raised Beach Deposits	4.72–5.90	

6.6.5 The thickest sequence of Raised Beach Deposits was in BH105 in GCZ 5b, with 7.65m identifiable above bedrock. These Raised Beach Deposits comprised of basal sandy silty clays, overlain by alternating units of sands and sandy clays, with more gravelly units at the top.

6.6.6 Based on elevations (basal heights of between c. 10m and 8m OD), the GDBA and GLC (Wessex Archaeology 2023a) correlated the Raised Beach Deposits in GCZs 5a-5c with the Brighton-Norton Beach that has been dated though Optically Stimulated Luminescence (OSL) dating to late MIS 7 to MIS 6 (220–170 Kya; Bates et al. 2010; see **Section 2.5**)

6.6.7 In GI records the Raised Beach Deposits and bedrock slopes were overlain by gravelly sandy clays, which are characteristic of Pleistocene Slope Deposits (Head). These have reworked earlier sediments downslope, likely principally through solifluction processes in periglacial environments during Pleistocene cold stages. Their stratigraphic position above deposits of the Brighton-Norton Beach demonstrates that they date to MIS 6 or later (<190 Kya).

Palaeoenvironmental potential

6.6.8 Finer-grained sediments within the Raised Beach Deposits have high potential to preserve significant palaeoenvironmental datasets, including molluscs/vertebrates, ostracods foraminifera, diatoms and pollen. Units identified through log review from BH103–105 and BH202 are assigned high priority status (**Table 10**). Additionally, overlying Head Deposits may be calcareous and therefore may contain units that preserve mollusc/vertebrate remains, resulting in a moderate priority status (**Table 10**). These interventions were not selected for monitoring (Royal HaskoningDHV 2022, 2023) and no samples of these sediments could be obtained.

Table 10 Palaeoenvironmental potential - GI interventions in GCZ 5b and 5c

GI Ref.	Depth - top (m bgl)	Depth - bottom (m bgl)	Lithology	Stratigraphy	Priority	Monitored?	Sampled?
BH101	0.9	1.2	Sandy Gravelly Clays	Head Deposits	Moderate	No	No
BH101	1.2	1.6	Silty Clay	Possible Raised Beach Deposits	High	No	No
BH101	1.6	2.1	Silty Sandy Clay	Possible Raised Beach Deposits	High	No	No
BH102	0.5	0.9	Silty Sandy Gravelly Clays	Head Deposits	Moderate	No	No

BH102	0.9	1.2	Sandy Gravelly Clays	Head Deposits	Moderate	No	No
BH102A	0.6	0.8	Sandy Gravelly Clays	Head Deposits	Moderate	No	No
BH102A	0.8	1.2	Sandy Gravelly Clays	Head Deposits	Moderate	No	No
BH103	0.4	1.1	Gravelly Silty Clay	Head Deposits	Moderate	No	No
BH103	1.1	1.2	Silty Sandy Gravelly Clays	Raised Beach Deposits	Moderate	No	No
BH103	1.2	2.3	Sandy Gravelly Clays	Raised Beach Deposits	Moderate	No	No
BH103	2.3	3.4	Clayey Gravelly Sand	Raised Beach Deposits	Moderate	No	No
BH104	0.7	1.2	Silty Sandy Clay	Head Deposits	Moderate	No	No
BH104	1.2	3.3	Silty Sandy Clay	Raised Beach Deposits	High	No	No
BH104	3.3	4.0	Silty Clay	Raised Beach Deposits	High	No	No
BH104	4.3	5.0	Silty Sandy Clay	Raised Beach Deposits	High	No	No
BH105	0.5	1.2	Sandy Clay	Head Deposits	Moderate	No	No
BH105	1.2	2.7	Sandy Clay	Raised Beach Deposits	High	No	No
BH105	2.7	3.6	Clayey Sand	Raised Beach Deposits	High	No	No
BH105	3.6	5.5	Sandy Clay	Raised Beach Deposits	High	No	No
BH105	5.5	6.8	Sand	Raised Beach Deposits	High	No	No
BH105	6.8	7.2	Clay	Raised Beach Deposits	High	No	No
BH105	7.2	7.9	Silty Sandy Clay	Raised Beach Deposits	High	No	No

BH106	0.5	1.2	Clay	Head Deposits	Moderate	No	No
BH106	1.2	4.2	Clay	Head Deposits	Moderate	No	No
BH106	4.2	4.8	Silty Clay	Possible Raised Beach Deposits	Moderate	No	No
BH202	2.5	4.7	Sandy Clay	Head Deposits	Moderate	No	No
BH202	4.7	5.9	Sand	Raised Beach Deposits	High	No	No

6.7 GCZ 6

Introduction

6.7.1 The zone is located at the confluence of the Hermitage Stream and Brockhampton Stream and at the northwestern side of Langstone Harbour (**Figure 8**). Geologically the zone is marked by a change in bedrock from Palaeogene sediments of the Hampshire Basin to chalk of the eroded Portsdown Anticline (**Figure 4**).

Deposits

6.7.2 BGS mapping (**Figure 8**) records Pleistocene River Terrace Deposits, overlain by Holocene Alluvium. However, the GDBA and GLC (Wessex Archaeology 2023a) demonstrated that this mapping is incorrect and identified at least c. 10m and up to c. 20m of Quaternary sediments infilling a basin formed within the chalk bedrock. Formation processes associated with this basin are uncertain but may relate to dissolution of the chalk bedrock creating a solution feature, or a series of solution features that have coalesced, which has functioned as depocentre for these deposits.

6.7.3 The Quaternary stratigraphy identified in the GDBA and GLC (Wessex Archaeology 2023a) comprised:

- Made Ground (Recent)
- Hermitage Stream Alluvium (Holocene)
- Clays (?Holocene)
- Gravelly Clays (?Pleistocene)
- Gravels (Pleistocene)
- Chalky Silts and Gravels (Pleistocene)
- Possible Chalky Silts and Gravels (Pleistocene)

6.7.4 Eight Phase 1, Phase 2 or Phases 3a-c GI interventions were located in the north of the Zone (**Table 11**). Six were geoarchaeologically monitored. Phase 0 GI, carried out at Budds Farm Waste Water Treatment Works, was located in the south of the zone (**Figure 8**). Geoarchaeological monitoring of Phase 0 GI has been reported on separately (Wessex Archaeology 2022), but records have been included in the geoarchaeological review of GI.

Table 11 GI interventions in GCZ 6

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl)	Notes
BHRP01	30.2	0	6	Geoarchaeological	Clays	0.65–2.90	Wessex Archaeology (2022)
					Gravelly Clays	2.90–3.50	
					Chalky Silts and Gravels	3.50–6.50	
					Possible Chalky Silts and Gravels	6.00–13.10	
BHRP02	26.5	0	6	Geoarchaeological	Gravelly Clays	0.25–1.70	Wessex Archaeology (2022)
					Gravels	1.70–3.40	
					Chalky Silts and Gravels	3.40–11.30	
					Possible Chalky Silts and Gravels	11.30–13.30	
BHW001	30.5	0	6	X Geoarchaeological	Marine Gravels	8.75–13.30	Wessex Archaeology (2022) Overlain by Made Ground
					Possible Chalky Silts and Gravels	13.30–23.00	
BHW002	30.8	0	6	Geoarchaeological	Gravels	9.00–14.80	Wessex Archaeology (2022) Overlain by Made Ground
					Chalky Silts and Gravels	14.80–20.00	
					Possible Chalky Silts and Gravels	20.00–21.00	
BHW003	29.2	0	6	Geoarchaeological	Chalky Silts and Gravels	11.40–19.40	Wessex Archaeology (2022) Overlain by Made Ground
					Possible Chalky Silts and Gravels	19.40–22.90	
BHW004	30.2	0	6	Geoarchaeological	Possible Chalky Silts and Gravels	11.00–21.35	Wessex Archaeology (2022) Overlain by Made Ground
BHW005	30.0	0	6	Geoarchaeological	Clays	2.18–2.98	Wessex Archaeology (2022) Overlain by Made Ground
					Gravels	2.98–7.20	
					Chalky Silts and Gravels	7.20–19.67	

WSW01	3.0	0	6	Geoarchaeological	-		Wessex Archaeology (2022) Made Ground >4.45m bgl
WSW02	6.5	0	6	Geoarchaeological			Wessex Archaeology (2022) Made Ground >6.45m bgl
WSW03	4.5	0	6	Geoarchaeological	Clays	2.50–3.70	Wessex Archaeology (2022) Overlain by Made Ground
					Gravels	3.70–4.45+	
WSW04	0.8	0	6	Geoarchaeological			Wessex Archaeology (2022) Made Ground >0.80 bgl
2B1500SA	10	2	6	None	Clays	0.15–1.85	
					Gravelly Clays	1.85–3.40	
					Gravels	3.40–7.70	
					Chalky Silts and Gravels	7.70–10.00+	
BHP01	30.8	3A	6	Geoarchaeological	Clays	0.65–2.90	
					Gravelly Clays	2.90–3.50	
					Chalky Silts and Gravels	3.50 –8.00	
					Possible Chalky Silts and Gravels	8.00–13.10	
BHP02	26.1	3A	6	Geoarchaeological	Gravelly Clays	0.25–1.70	
					Gravels	1.70–3.40	
					Chalky Silts and Gravels	3.40–11.30	
					Possible Chalky Silts and Gravels	11.30–13.30	
BHP05	26.2	3A	6	Geoarchaeological	Gravelly Clays	1.00–4.30	
					Chalky Silts and Gravels	4.30–8.20	
					Possible Chalky Silts and Gravels	8.20–15.70	
BHP06	35.2	3A	6	Geoarchaeological	Possible Slope	0.80–7.20	

					Deposits (Head)		
TPP01	4.0	3A	6	Geoarchaeological	Clays	0.30–0.70	
					Gravelly Clays	0.70–3.10+	
TPP02	4.0	3A	6	Geoarchaeological	Clays	0.70–1.20	
					Gravelly Clays	1.20–4.00+	
TPP05-DS	5.2	3A	6	None	Alluvium	0.70–4.30	
					Gravelly Clays	4.30–5.20+	

Chalky Silts and Gravels / Possible Chalky Silts and Gravels

6.7.5 The earliest Quaternary deposits recorded comprised chalky silts and gravelly chalky silts/chalky gravels that contained sub-rounded to rounded chalk clasts and angular flint clasts. The lithostratigraphies of these deposits suggests that these are Pleistocene Freshwater Deposits, similar to those identified 2km to the east at Warblington (Bates et al. 2009; see **Section 4.3**). These Chalky Silts and Gravels are underlain by chalk bedrock. Distinguishing these Pleistocene sediments from chalk bedrock is dependent on the quality of individual deposit records and in monitored locations was inhibited by the principal GI technique (cable percussion boreholes) requiring large amounts of water to be used resulting in heavily disturbed and mixed sediments being recovered. Consequently, Possible Chalky Silts and Gravels have been identified, reflecting where there is uncertainty. The data indicates that up to c. 7.0m of Chalky Silts and Gravels were recorded in GI (BHRP02). In places all Quaternary deposits overlying these Chalky Silts and Gravels had been truncated and were overlain by up to 11.4m of Made Ground (BHW003).

6.7.6 **Figures 10**–**18** illustrate the result of the deposit model for GCZ 6. **Figures 10**–**12** provide transects through the Quaternary deposits, whilst **Figures 12** and **13** provide a digital elevation model for the bedrock surface and thickness plot of the Chalky Silts and Gravels. These combined datasets demonstrate that these Chalky Silts and Gravels are infilling a basin within the chalk that extends from north to south and west to east, with bedrock heights decreasing from c. 5.0m OD to c. -16.0m OD.

6.7.7 These chalky deposits are interpreted as Pleistocene periglacial solifluction gravels and finer-grained chalky silts that formed in a body of fresh water. The age range within the Pleistocene period of the chalky deposits in GCZ 6 is unknown; given their thickness they are likely to cover a significant period of time. At Warblington the upper part of similar deposits has been dated through OSL dating to late MIS 3 (Bates et al. 2009). Some of the deposits in GCZ 6 could be a similar age, but as **Figures 10**–**12** illustrate, the chalky deposits in the south of the zone are potentially overlain by sediments of the Pagham Beach (dated to MIS 5e; see below), suggesting that some of the Chalky Silts and Gravels may date to MIS 6 or earlier.

Gravels

6.7.8 The Chalky Silts and Gravels are often overlain by flint-rich gravels. Interpretation of these gravels is inhibited by the variable quality of lithological descriptions, particularly within BGS borehole records from the area (BGS GeoIndex). Generally, these are described as sandy sub-angular to sub-rounded flint gravels or gravelly sands. Often a gradual increase in chalk content with depth was noted. Some deposit records described the gravels as rounded and sub-rounded, with occasional cobbles; gravel such as this is characteristic of marine

deposition. Based on the available data these gravels are interpreted as having been deposited in a coastal environment as part of the Lower Coastal Plain Pleistocene raised beach stratigraphies.

6.7.9 Transects through these deposits (**Figures 10**–**12**) demonstrate that the base of the Gravels occurred from c. 0.0 to -2.0m in the north of GCZ 6, descending to c. -6.0m OD in the south of the zone. These heights may be consistent with those of the Pagham Beach, which is dated to MIS 5e (Bates et al. 2010). Further work is required to investigate this, however. The basal heights are lower than the +1.0m OD basal height recorded for these deposits 2km to the east at Warblington (Bates et al. 2009). Additionally, the some of the Gravels in GCZ 6, specifically those located furthest south, are often recorded overlying Chalky Silts and Gravels. At Warblington similar chalky deposits are thought to post-date, rather than predate, the Pagham Beach (Bates et al 2010). This could indicate that that at least some Chalky Silts and Gravels in GCZ 6 may be older than those at Warblington. Dating of these deposits would be required to resolve this.

6.7.10 A thickness plot for the Gravels (**Figure 15**) demonstrates that up to c. 10m may be present in GCZ 6. This maximum thickness may be an overestimate; however, the transition to Gravels with an increased chalk content recorded in some deposit records may reflect a change in lithostratigraphy to the underlying Chalky Silts and Gravels. Commonly up to 6m of flint Gravel was recorded in deposit records. The plot demonstrates the Gravels occurring in deposit records to the north and south of the zone; the gap between these may reflect removal by erosion prior to deposition of the overlying Gravelly Clays

Gravelly Clays

6.7.11 The Chalky Silts and Gravels are post-dated by Gravelly Clays. Available lithological descriptions of these Gravelly Clays contain limited lithological detail; they are generally described as silty and sandy clays containing flint gravel clasts. Transects (**Figures 10**–**12**) and a thickness plot (**Figure 16**) demonstrate that the thickest sequences of Gravelly Clays run in a linear orientation from northwest to southeast. These may be within a buried valley.

6.7.12 The mode of deposition of the Gravelly Clays is uncertain; more detailed lithological descriptions are required to assess this. The clasts may indicate deposition through cold stage slope processes (e.g. solifluction) but they could be alluvial sediments or reflect a combination of multiple depositional processes. The age of the Gravelly Clays is currently unknown. They are assumed to be Pleistocene, but this is not certain.

Clays

6.7.13 Deposit records recorded silty and sandy, generally clast free Clays overlying Gravelly Clays in GCZ 6. Transects (**Figures 10**–**12**) and a thickness plot (**Figure 17**) demonstrate the Clays occurred across the deposit records and were likely previously more extensive, having been truncated by recent impacts and replaced with Made Ground. These Clays are interpreted as alluvial sediments, potentially deposited in an estuarine environment within Langstone Harbour. Their age is uncertain but due to their position in the lithostratigraphic framework, they may be of Holocene date.

6.7.14 These are likely the northern edge of a Holocene alluvial sequence which thickens to the south across Langstone Harbour. Further south within Langstone Harbour, borehole data has recorded grey blue silts over peats at -11.90m and -10.75m OD (Wimpey 1962, Mottershead 1976). These peats are within deeply incised channels. The peats are undated but have been suggested to date to the Mesolithic (c. 7000 BP), when the coastline is considered to have been located 40km to the south of Langstone Harbour (Allen and Gardner 2000).

Alluvium

6.7.15 The Hermitage Stream and several minor parallel water courses flow from north to south across GCZ 6. Although not recorded in GI investigations, BGS deposit records (BGS GeoIndex) from immediately adjacent to these watercourses (e.g. SU70NW106 and SU70NW106) recorded alternating silty clay, sandy clay and gravelly units, which are Holocene alluvial sediments belonging to these streams. Most deposits identified in records are minerogenic, but localised peats were also present (e g. SU70NW248; see **Figure 11**).

Made Ground

6.7.16 Significant depths of Made Ground (up to 11.4m thick in GI records) are recorded in GCZ 6. A thickness plot (**Figure 18**) demonstrates that Made Ground is concentrated in an area of known landfill around the existing Budds Farm Waste Water Treatment Plan. Transects through the deposits (**Figures 10**–**12**) suggest that, although the upper Quaternary deposits have been truncated and areas of removed material infilled with Made Ground, some of the Made Ground comprises made-up ground, built up above the original landsurface. Although at significant depths below ground level, remnants of Quaternary stratigraphy were usually present beneath the Made Ground in these areas.

Archaeology

6.7.17 Monitoring of DHP01, 02, 05, 06 and TPP01–TPP022 did not identify any archaeology.

Palaeoenvironmental potential

6.7.18 Monitoring identified Chalky Silts and Gravels which have high potential to preserve significant palaeoenvironmental datasets (molluscs/vertebrates, ostracods foraminifera, diatoms and pollen) and which have been assigned high priority status (**Table 12**). These were principally identified in cable percussion boreholes (BHP01, BHP02 and BHP05). Drilling through these dense deposits using this technique recovered heavily disturbed and mixed samples, which was exacerbated by the need to add water to 'flush' boreholes. Such material recovered is not suitable for palaeoenvironmental assessment.

6.7.19 Two relatively undisturbed 0.2l samples were obtained from the top 0.60m of a 3.90m thick sequence of Chalky Silts and Gravels in BHP05. These are suitable for assessment, but their value is limited by being samples from only the top of a sequence and would not be dateable.

Table 12 Palaeoenvironmental potential - GI interventions in GCZ 6

GI Ref.	Depth - top (m bgl)	Depth - bottom (m bgl)	Lithology	Stratigraphy	Priority	Monitored?	Sampled?
BHP01	2.9	3.5	Sandy Gravelly Clays	Gravelly Clays	Moderate	Yes	No
BHP01	3.5	4	Sandy Gravelly Clays	Chalky Silts and Gravels	Moderate	Yes	No
BHP01	4.0	6.5	Gravelly Silt	Chalky Silts and Gravels	High	Yes	No
BHP02	1.7	3.4	Sandy Gravelly Clays	Gravelly Clays	Moderate	Yes	No

BHP02	3.4	4.0	Gravelly Silt	Chalky Silts and Gravels	High	Yes	No
BHP02	4.0	7.5	Sandy Gravelly Silt	Chalky Silts and Gravels	High	Yes	No
BHP02	8.1	8.5	Chalky Gravel	Chalky Silts and Gravels	Moderate	Yes	No
BHP05	2.1	3.4	Sandy Gravelly Clays	Gravelly Clays	Moderate	Yes	No
BHP05	3.4	4.3	Gravelly Clays	Gravelly Clays	Moderate	Yes	Yes
BHP05	4.3	5.0	Gravelly Silty Clay	Chalky Silts and Gravels	High	Yes	Yes
BHP05	5.0	5.7	Silty Clayey Gravel	Chalky Silts and Gravels	High	Yes	No
BHP05	5.7	8.2	Sandy Silt	Chalky Silts and Gravels	High	Yes	No
TPP01	0.7	1.4	Silty Gravelly Clays	Gravelly Clays	Moderate	Yes	No
TPP01	1.4	3.1	Silty Gravelly Clays	Gravelly Clays	Moderate	Yes	No
TPP01	3.1	4	Silty Gravelly Clays	Chalky Silts and Gravels	High	Yes	No
TPP02	1.2	2	Silty Gravelly Clays	Gravelly Clays	Moderate	Yes	No
TPP02	2.0	3.1	Silty Gravelly Clays	Gravelly Clays	Moderate	Yes	No
TPP02	3.1	4	Gravelly Clays	Gravelly Clays	Moderate	Yes	No
TPP05-DS	4.3	5.2	Silty Gravelly Clays	Gravelly Clays	Moderate	No	No

6.7.20 The overlying Gravelly Clays contained calcareous units that may also preserve similar palaeoenvironmental datasets and have been assigned a moderate status (**Table 12**). Recovery techniques similarly restricted opportunities for recovering samples of these sediments suitable for geoarchaeological palaeoenvironmental assessment during monitoring, but two 0.2l samples were obtained from the top and bottom of calcareous unit of the Gravelly Silts in BHP05.

6.8 GCZ 7

Introduction

6.8.1 GCZ 7 consists of the southern slope of Portsdown Hill, north of Pleistocene Raised Beach deposits recorded in GCZ 5c (**Figure 19**).

6.8.2 Four GI interventions were located in this zone two in the east (BH301 and 2D2500SA) and two in the west (BH302 and 2D2501DS) (**Figure 18**). Two of these interventions (BH301 and BH302) was identified for archaeological and geoarchaeological monitoring (Royal HaskoningDHV 2022, 2023).

Deposits

6.8.3 Two monitored interventions (BH301 and BH302) recorded up to 0.80m of light brown to grey gravelly silt containing angular to surrounded flint and chalk clasts, overlying chalk bedrock (**Table 13**). These were identified as Slope Deposits, potentially of Pleistocene date, formed on the slopes of Portsdown Hill through the erosion of the bedrock Cretaceous chalk and eroded Palaeogene sediments. Deposition may have been through solifluction processes in periglacial environments during Pleistocene cold stages.

Table 13 GI interventions in GCZ 7

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
BH301	100.3	1	7	Archaeological and Geoarchaeological	Slope Deposits (Head)	0.16–0.75	
BH302	91.5	1	7	Archaeological and Geoarchaeological	Slope Deposits (Head)	0.40–1.20	
2D2500SA	10.5	2	7	None	None	-	
2D2501DS	3.5	2	7	None	None	-	

6.8.4 Deposit modelling (**Figure 21**) indicates that these Slope Deposits are within the head a of dry valley, which is mapped by the BGS (**Figure 20**) further to the north, and which continues north through Widley to join a south bank tributary valley of the Wallington River. The age of these Slope Deposits is unknown, they could include both Pleistocene Head Deposits and Holocene colluvium.

Archaeology

6.8.5 Monitoring of BH301 and BH302 did not identify any archaeology.

Palaeoenvironmental potential

6.8.6 The Slope Deposits identified in this zone may be calcareous and have broad potential to preserve palaeoenvironmental datasets, specifically molluscs. However, the deposits in the monitored boreholes were shallow and in places bioturbated and were therefore not suitable for palaeoenvironmental sampling and have been assigned a low priority status (**Appendix 6**).

6.9 GCZ 8

Introduction

6.9.1 GCZ 8 is defined by Portsdown Hill, which comprises an elevated chalk plateau formed from the Portsdown Anticline. Review of BGS and LiDAR data has demonstrated that broadly northward trending parallel dry valleys occur that dissect the zone (**Figure 20**). North of GCZ 8, these valleys join the main valley of the Wallington River.

6.9.2 45 GI interventions were located in this zone (**Figure 20**). One was identified for archaeological monitoring and 18 for combined archaeological and geoarchaeological monitoring and (Royal HaskoningDHV 2022, 2023, 2024).

Deposits

6.9.3 Monitoring and geoarchaeological review of GI records demonstrates that Quaternary sediments, comprising Slope Deposits (Head), were only locally recorded in GI interventions in GCZ 8. Deposit modelling transects (**Figures 21**–**23**) demonstrate that these Slope Deposits are within the dry valleys identifiable in BGS mapping and LiDAR data (**Figure 20**).

Table 14 GI interventions in GCZ 8

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
BH303D	115.0	1	8	Archaeological and Geoarchaeological	Slope Deposits (Head)	0.50–2.90	
TP304	3.6	1	8	Archaeological and Geoarchaeological	None	-	
TP305	3.0	1	8	Archaeological and Geoarchaeological	None	-	
TP306	3.2	1	8	Archaeological and Geoarchaeological	None	-	
2E3000RC	30.9	2	8	Archaeological and Geoarchaeological	None	-	
2E3002RC	30.8	2	8	Archaeological and Geoarchaeological	None	-	
2F3500DS	4.3	2	8	Archaeological and Geoarchaeological	Slope Deposits (Head)	1.50–3.25	Overlain by Made Ground
2F3501DS	4.3	2	8	Archaeological and Geoarchaeological	Slope Deposits (Head)	0.30–3.20	
3E7501IT	2.5	3B	8	Archaeological and Geoarchaeological	None	-	
3E7502IT	2.5	3B	8	Archaeological and Geoarchaeological	None	-	
3E7503IT	2.3	3B	8	Archaeological and Geoarchaeological	None	-	
3E7504IT	2.4	3B	8	Archaeological and Geoarchaeological	None	-	

3E7505IT	2.5	3B	8	Archaeological and Geoarchaeological	None	-	
3E7506IT	2.5	3B	8	Archaeological and Geoarchaeological	None	-	
3E7507IT	2.5	3B	8	Archaeological and Geoarchaeological	None	-	
3E7508IT	2.3	3B	8	Archaeological and Geoarchaeological	None	-	
3E3019DP	4.8	3C	8	None	Slope Deposits (Head)	0.35–1.20	
3E3020DS	1.8	3C	8	None	None	-	
3E3021DS	3.4	3C	8	None	Slope Deposits (Head)	0.40–1.40	
3E3022HP	0.9	3C	8	None	Slope Deposits (Head)	0.55–0.90+	
3E3023TP	4.0	3C	8	None			Test pit through Made Ground to >4.00m bgl
3E3034HP	1.1	3C	8	Archaeological and Geoarchaeological	Slope Deposits (Head)	0.00–1.10+	
3E3035DS	3.3	3C	8	Archaeological and Geoarchaeological	Slope Deposits (Head)	0.40–1.20	
3E3036DS	2.9	3C	8	None	Slope Deposits (Head)	0.40–1.20	
3E3038HP	1.0	3C	8	None	None	-	
3E3100DS	2.4	3C	8	None	None	--	
3E3101TP	3.0	3C	8	None	None		
3E3102TP	4.0	3C	8	None	Possible Slope Deposits (Head)	0.25–1.60	
3E3103HP	1.2	3C	8	None	Slope Deposits (Head)	0.35–0.60	
3E3104HP	1.2	3C	8	None	Slope Deposits (Head)	0.30–0.80	
3E3105HP	1.2	3C	8	None	Slope Deposits (Head)	0.30–0.80	

3E3106TP	4.0	3C	8	None	Slope Deposits (Head)	0.25–1.50	
3E3107HP	1.1	3C	8	None	Slope Deposits (Head)	0.60–1.10+	
3E3108TP	2.6	3C	8	None	None	-	
3E3109HP	1.2	3C	8	None	Slope Deposits (Head)	0.35–1.20+	
3E3110DS	3.9	3C	8	None	Slope Deposits (Head)	0.35–0.80	
3E3111HP	1.2	3C	8	None	Slope Deposits (Head)	0.25–1.20+	
3E3112TP	4.0	3C	8	None	None		
3E3113HP	1.2	3C	8	None	Slope Deposits (Head)	0.40–0.55	
3E3114DS	3.5	3C	8	None	None	-	
3E3115DS	6.5	3C	8	None			Borehole through Made Ground to >6.5m bgl
3E3117DS	2.3	3C	8	None	None	-	
3E3119HP	1.1	3C	8	Archaeological	Slope Deposits (Head)	0.25–1.10+	
3F3601HP	1.2	3C	8	None	Slope Deposits (Head)	0.15–1.20+	

6.9.4 In the east of the zone GI interventions were located along the southern edge of dry valley systems located to the north (**Figure 20**). Interventions in this area consistently identified Slope Deposits (Head) ranging from 1.25m to 0.25m in thickness (**Figure 21**). The Slope Deposits consisted of reddish brown slightly gravelly clays containing poorly sorted sub-angular flint clasts. These reflect downslope reworking of Bedrock sediments. These Slope Deposits are of unknown age and could include both Pleistocene Head Deposits and Holocene Colluvium.

6.9.5 Further west (**Figure 22**), GI locations crossed areas of high ground along Portsdown Hill, where Quaternary deposits only locally occur within well-defined dry valleys that are located along the northern edge of Portsdown Hill, and which continue northwards to join the main valley of the Wallington River. Within these dry valleys >1.0m of brown slightly sandy, slightly gravelly clays containing poorly sorted, angular flint clasts were recorded in GI interventions (e.g. 3E3034HP and 3E3111HP), whilst on the valley margins (e.g. 3E3019DS) <1.0m of these clays were underlain by c. 0.50m of whitish brown clayey silty gravels containing poorly sorted sub-angular flint and sub-angular to sub-rounded chalk clasts were identified. The chalky gravels are likely to be Pleistocene solifluction deposits,

whilst the brown slightly gravelly clays may include both Pleistocene Head Deposits and Holocene Colluvium.

6.9.6 The west of GCZ 8 is at the western end of Portsdown Hill, immediately east of the valley of the Wallington River (**Figure 23**). A deposit modelling transect (**Figure 24**) illustrates that bedrock heights decrease from c. 55m OD to c. 30m OD from west to east in this area of the zone and that slopes formed by this topography are overlain by Slope Deposits (Head). In GI interventions up to c. 3.0m of these Slope Deposits were recorded (2F3501DS). In thicker sequences two units were often observed comprising a lower firmer brown slightly gravelly clay containing poorly sorted angular to sub-angular flint and chalk clasts, overlain by yellowish brown silty clays containing angular to sub-angular flint and chalk clasts. Although undated, such lithostratigraphic divisions may reflect Pleistocene Head Deposits, that are overlain by Holocene Colluvium.

6.9.7 Previous review of LiDAR data (**Figure 20** and **Figure 23**) identified hollows on highpoints on Portsdown Hill in GCZ 8, particularly on the scarp slope of Portsdown Hill and above the valley of Wallington River in areas adjacent to the Project Boundary in the west of the GCZ (**Figure 23**). These are typically circular and measure between 20-30m in diameter. Whilst some relate to historic chalk pits, many, particularly of the more 'saucer' shaped examples, are likely to be solution features, resulting from dissolution of chalk bedrock. It should be noted that locations where solution features have surface expression these are indicative of areas of chalk dissolution where other, fully infilled and not visible solution features can occur. Consequently, there is potential for further solution features not visible in LiDAR to be present within the Project boundary in these areas.

6.9.8 Solution features can contain Quaternary deposits of both Pleistocene and Holocene date. One GI intervention (2F3501DS) was located on the edge of a possible solution feature identified in LiDAR data (**Figure 23**). This recorded, beneath topsoil, 1.2m of soft sandy gravelly clays above 2.0m of stiff slightly sandy, slightly gravelly clays over what was interpreted as >1.1m of chalk bedrock. The clays were interpreted as Slope Deposits and are likely to be infilling, and located on the edge of, the solution feature. As the fill of the solution feature will deepen towards the centre, the records indicates that this solution feature contains a significant depth of Pleistocene and/or Holocene sediments.

Archaeology

6.9.9 No archaeology was identified at monitored locations in this zone.

Palaeoenvironmental potential

6.9.10 Most GI interventions in this zone either did not encounter Quaternary deposits or identify shallow, bioturbated sequences of Slope Deposits assigned low palaeoenvironmental priority status (**Appendix 6**).

6.9.11 Some deeper sequences of Slope Deposits were identified as containing calcareous units which could preserve molluscs and have been assigned moderate palaeoenvironmental priority status (**Table 15**). Thes include the likely fill of a solution feature (2F3501DS).

Table 15 Palaeoenvironmental potential - GI interventions in GCZ 8

GI Ref.	Depth - top (m bgl)	Depth - bottom (m bgl)	Lithology	Stratigraphy	Priority	Monitored?	Sampled?
BH303D	0.5	1.2	Sandy Clay	Head Deposits	Moderate	No	No

BH303D	1.2	2.9	Gravelly Clays	Head Deposits	Moderate	No	No
2F3500DS	1.5	3.3	Clay	Head Deposits	Moderate	Yes	No
2F3501DS	0.3	1.2	Sandy Gravelly Clays	Head Deposits	Moderate	Yes	No
2F3501DS	1.2	3.2	Clay	Head Deposits	Moderate	Yes	No
3E3021DS	0.4	0.9	Gravelly Clays	Head Deposits	Moderate	No	No
3E3021DS	0.9	1.4	Gravelly Clays	Head Deposits	Moderate	No	No
3E3106TP	0.3	1.5	Gravelly Clays	Head Deposits	Moderate	Yes	No
3E3107HP	0.6	0.8	Clay	Head Deposits	Moderate	Yes	No
3E3107HP	0.8	1.1	Sandy Clay	Head Deposits	Moderate	Yes	No
3E3109HP	0.4	1.2	Gravelly Silty Sand	Head Deposits	Moderate	Yes	No
3E3111HP	0.3	1.2	Gravelly Sandy Clay	Head Deposits	Moderate	Yes	No
3E3119HP	0.3	1.1	Sandy Clay	Head Deposits	Moderate	Yes	No
3F3601HP	0.6	1.2	Gravelly Clays	Head Deposits	Moderate	No	No

6.9.12 In most instances where moderate palaeoenvironmental priority deposits were identified monitoring, only the top of these deposits were reached in hand dug pits and machine dug trial pits. In these instances, the deposits were not suitable for sampling, partly due to bioturbation of the top of the deposits, but principally as sampling such deposits either requires continuous cores suitable for detailed recoding or the excavation of sections, which can be cleaned and to identify details of stratigraphy and depositional processes to allow for the recovery of continuous stratified samples from appropriate units. This was not possible from hand dug pits dug by the GI contractor, whilst machine dug trial pits could not be accessed.

6.9.13 Two monitored dynamic boreholes (2F3500DS and 2F3501DS) recovered complete stratigraphic sequences through Slope Deposits assigned moderate priority, one of which (2F3500DS) included a slightly gravelly clay unit containing rare shells/shell debris. The cores from these boreholes would have been suitable for detailed geoarchaeological recording and, potentially, paleoenvironmental sampling. However, although split and recorded on-site under geoarchaeological supervision, these were required to be retained and removed off-site for geotechnical sampling and no geoarchaeological samples could be taken.

6.10 GCZ 12

Introduction

6.10.1 GCZ 12 is located immediately west of GCZ 8, and to the west of Portsdown Hill (**Figure 23**). The Project Boundary in this zone crosses the valley of the Wallington River, where the valley is incised through the western end of the chalk forming the Portsdown Anticline.

6.10.2 20 GI interventions were located in this zone, three of which were identified for archaeological monitoring, five for geoarchaeological monitoring and three for combined archaeological and geoarchaeological monitoring (Royal HaskoningDHV 2022, 2023, 2024; **Table 16**).

Table 16 GI interventions in GCZ 12

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
2F3502SA	9.1	2	12	None	Possible River Terrace Deposits	0.30–4.00	
2F3503SA	8.5	2	12	Geoarchaeological	River Terrace Deposits	0.30–5.30	
2F3504DS	22.5	2	12	None	Slope Deposits (Head)	0.20–1.35	
2F3505DS	6.5	2	12	None	Slope Deposits (Head)	0.30–1.20	
3F3519HP	1.1	3C	12	Archaeological	Slope Deposits (Head)	0.25–0.35	
3F3521HP	1.2	3C	12	Archaeological and Geoarchaeological	Slope Deposits (Head)	0.25–1.20+	
3F3523DR	30.2	3C	12	Archaeological	Slope Deposits (Head)	0.28–1.20	
					Possible River Terrace Deposits	1.20–6.75	
3F3524DR	30.2	3C	12	None	Slope Deposits (Head)	0.35–5.50	
					Possible River Terrace Deposits	5.50–7.85	
3F3602HP	1.0	3C	12	Archaeological	Slope Deposits (Head)	0.30–1.00+	

3F7509IT	2.5	3C	12	Geoarchaeological	Slope Deposits (Head)	0.30–2.50+	
3F7510IT	2.5	3C	12	Geoarchaeological	Slope Deposits (Head)	0.30–2.50+	
3F7512IT	2.5	3C	12	Geoarchaeological	Slope Deposits (Head)	0.30–0.80	
3F7513IT	2.5	3C	12	Geoarchaeological	Slope Deposits (Head)	0.00–1.10	
3W8553DS	6.5	3C	12	Archaeological and Geoarchaeological	Slope Deposits (Head)	0.35–1.40	
3W8554DS	6.5	3C	12	Archaeological and Geoarchaeological	Slope Deposits (Head)	0.20–1.45	
3W8556DS	5.5	3C	12	None	Possible Slope Deposits (Head)	0.35–1.60	
3W8558SA	10.0	3C	12	None	None		Made Ground from 0.30–3.50, above Bedrock
3W8559TP	4.0	3C	12	None	Possible River Terrace Deposits	0.30–3.10	
3W8563TP	4.0	3C	12	None	Possible River Terrace Deposits	0.30–2.30	
3W8567SA	8.0	3c	12	None	None		Possible Made Ground from 0.30–2.40.50, above Bedrock

Deposits

6.10.3 The monitoring and geoarchaeological assessment of GI logs identified Quaternary deposits comprising fluvial sediments of the Wallington River, and Slope Deposits. Within the Project Boundary to the east and west of the current course of the Wallington River, GI interventions (e.g. 2F3503SA, 2F3502SA) recorded up to c. 3.20m of clastic fluvial deposits comprising light yellowish brown chalky gravelly sandy clays containing sub-angular to sub-rounded chalk and flint clasts, overlain by dark brown clayey gravelly sands that contained sub-angular flint clasts. These sequences are interpreted as late Pleistocene fluvial sands and gravels formed at the base of the Holocene floodplain of the Wallington River.

6.10.4 LiDAR suggests solution features are present in the west of the GCZ, along the western slopes of Portsdown Hill (**Figure 23**). Although no solution features visible in LiDAR data

are recorded in the Project Boundary, infilled solution features that do not have surface expression could occur. A single GI intervention was located in this area (3F3519HP) which recorded 0.10m of Slope Deposits above chalk bedrock.

6.10.5 Deposit modelling, as illustrated through a west to east orientated transect (**Figure 25**), demonstrates that the surface of Bedrock underlying the fluvial sands and gravel was at c. 3.0m OD, with bedrock heights increase rapidly to c. 30.0m OD within 500m to the east. This likely reflects the current position of the Wallington River being at the eastern extent of its lateral migration across Paleogene bedrock to the west, to the chalk interfluve formed by Portsdown Hill to the east. Although data coverage is limited, no earlier Pleistocene deposits of the Wallington River were identified within the Project Boundary on these western slopes of Portsdown Hill.

6.10.6 West of the current floodplain of the Wallington River the BGS maps Pleistocene Head and Pleistocene River Terrace Deposits (**Figure 23**). The Head Deposits are within a dry valley, with the terrace deposits recorded in areas to the north. GI interventions were concentrated within this dry valley (**Figure 23**). A north-south transect through deposit records (**Figure 26**) illustrates that this dry valley is infilled with sequences of Quaternary sediments that are up to 7.5m thick (3F524DR and 3F3523DR). These Quaternary deposits comprised gravely silts and clays containing sub-angular to sub-rounded flint and chalk clasts, overlain by slightly gravelly clays containing angular and sub-angular flint and chalk clasts. These are interpreted as possible fluvial deposits (lower gravelly silts and clays) overlain by Slope Deposits (upper clays).

6.10.7 Further north, following the orientation of this valley and in areas where Pleistocene River Terraces are mapped by the BGS (**Figure 23**), up to 2.80m of gravelly sandy clays were recorded in GI interventions (e.g. 3W8559TP and 3W8563TP). These may be Pleistocene river terraces that are located on upper slopes of the valley. They indicate that this valley contained a former Pleistocene course the Wallington River. The presence of these possible River Terrace Deposits within this dry valley and the lack of evidence for Pleistocene terraces along the valley sides above the current course of the Wallington River (including on the western slopes of Portsdown Hill; see above), suggests that the current valley of the Wallington River may relate to a late Pleistocene diversion, with earlier deposits and Pleistocene terraces associated with a previously unrecognised former course located further west in the Project Boundary.

6.10.8 The Slope Deposits infilling this dry valley likely consist of later Pleistocene Head Deposits and Holocene Colluvium, which both post-date the reconfiguration of the Wallington River drainage. Different stratigraphic units were often identifiable during the GI monitoring within these Slope Deposits, suggesting multiple phases of deposition.

Archaeology

6.10.9 No archaeology was identified at monitored locations in this zone.

Palaeoenvironmental potential

6.10.10 Most GI interventions located in GCZ 12 that encountered River Terrace Deposits identified coarse sands and gravels, which have low palaeoenvironmental potential and which have been assigned low palaeoenvironmental priority status (**Appendix 6**). However, geoarchaeological monitoring identified a unit in the base of a terrace sequence in 2F3503SA (**Table 17**) that comprised of calcareous sandy gravelly silts, and which could preserve palaeoenvironmental evidence, including vertebrate remains and molluscs, although detailed archaeological recording would be required to assess depositional regime and the degree to which this material is reworked. Such recording was not possible as the

sediments were recovered as disturbed samples in a cable percussion borehole. The recovered material was determined to be significant disturbed and mixed with overlying sediments and was not suitable for palaeoenvironmental sampling.

6.10.11 Thick Head sequences recorded in the dry valley in this zone include units which are likely to calcareous and have been assigned moderate palaeoenvironmental priority status as they could preserve molluscs and possibly vertebrate remains (**Table 17)**. Most of the interventions containing these sediments were not monitored. Those that were monitored, were hand dug pits and machine dug trial trenches. Those generally only encountered the top of these sequences, and the excavation methods did not allow for suitable controlled palaeoenvironmental sampling.

Table 17 Palaeoenvironmental potential - GI interventions in GCZ 12

GI Ref.	Depth - top (m bgl)	Depth - bottom (m bgl)	Lithology	Stratigraphy	Priority	Monitored?	Sampled?
2F3503SA	3.5	5.3	Sandy Gravelly Silt	River Terrace Deposits	Moderate	Yes	No
2F3504DS	0.2	0.9	Sandy Gravelly Clays	Head Deposits	Moderate	No	No
2F3504DS	0.9	1.2	Silty Gravelly Clays	Head Deposits	Moderate	No	No
3F3521HP	0.9	1.2	Sandy Clay	Head Deposits	Moderate	Yes	No
3F3524DR	0.4	1.0	Clay	Head Deposits	Moderate	No	No
3F3524DR	1.0	1.2	Sandy Clay	Head Deposits	Moderate	No	No
3F3524DR	1.2	1.6	Gravelly Clays	Head Deposits	Moderate	No	No
3F3524DR	1.6	5.5	Silty Gravel	Head Deposits	Moderate	No	No
3F3524DR	5.5	7.9	Gravelly Silt	Possible Head Deposits	Moderate	No	No
3F3601HP	0.6	1.2	Gravelly Clays	Head Deposits	Moderate	No	No
3F3602HP	0.3	0.8	Sandy Clay	Head Deposits	Moderate	Yes	No
3F3602HP	0.8	0.9	Clay	Head Deposits	Moderate	Yes	No
3F3602HP	0.9	1.0	Gravelly Sandy Clay	Head Deposits	Moderate	Yes	No
3F7509IT	0.3	2.5	Gravelly Clays	Head Deposits	Moderate	Yes	No
3F7510IT	0.3	2.5	Gravelly Clays	Head Deposits	Moderate	Yes	No

6.11 GCZ 13

Introduction

6.11.1 GCZ 13 is the interfluve between the valleys of the Wallington River and Meon, with the Project Boundary running through the west of the zone (**Figure 23**).

6.11.2 Six GI interventions were located within GCZ 13, with an seventh (3W8527HP) located outside of the GDBA and EIA scoping zone, but within the Project Boundary (**Figure 22**). None were selected for monitoring (Royal HaskoningDHV 2022, 2023, 2024).

Deposits

6.11.3 The BGS (online viewer) maps no Quaternary deposits in this zone. The GDBA and GLC (Wessex Archaeology 2023a) suggested it was likely that Quaternary deposits are absent from much of this zone, but noted that outcrops of high-level terraces of the Wallington River in the west and/or Meon in the east could occur locally.

6.11.4 The interventions all contained Quaternary deposits (**Table 18**). In two, 3W8526HP and 3W8528HP, likely fluvial sands and gravels were present, comprising orange sandy gravels containing sub-angular to sub-rounded flint clasts. In 3W8526HP these were beneath 0.50m of orangish brown slightly gravelly slightly silty sandy clays, with sub-angular to sub-rounded flint clasts interpreted as Slope Deposits (Head). Similar silty clays, which may be Slope Deposits, were also identified in the other five interventions.

Table 18 GI interventions in GCZ 13

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
3W8526HP	1.0	3C	13	None	Slope Deposits (Head)	0.25–0.75	
					River Terrace Deposits	0.75 –1.00+	
3W8527HP	1.2	3C	13	None	Possible Slope Deposits (Head)	0.35–1.20+	Located outside of GDBA and GLC scope (Wessex Archaeology 2023a), north of GCZ 13
3W8528HP	1.2	3C	13	None	Possible River Terrace Deposits	0.40–0.80+	
3W8529SA	20.0	3C	13	None	Slope Deposits (Head)	0.35–0.70	
3W8530SA	20.0	3C	13	None	Slope Deposits (Head)	0.20–0.80	

3W8531HP	1.2	3C	13	None	Possible Slope Deposits (Head)	0.60–1.20+	
3W8560HP	1.2	3C	13	None	Possible Slope Deposits (Head)	0.35–1.20+	

6.11.5 The possible fluvial deposits could belong to Pleistocene terraces of the River Meon (known to occur to the west in GCZ 15). This is likely the case for 3W8528HP. However, 3W8526HP is on the same alignment as possible terrace deposits associated with a possible former course of the Wallington River, identified to the south in GCZ 13 (see above). The Slope Deposits could be Pleistocene Head, or Holocene Colluvium.

Palaeoenvironmental potential

6.11.6 The Quaternary deposits recorded in GI interventions in this zone likely all have limited paleoenvironmental potential, the River Terrace Deposits recorded being coarse sands and gravels and Slope Deposits likely being decalcified. They have been assigned a low palaeoenvironmental priority status (see **Appendix 6**).

6.12 GCZ 14

Introduction

6.12.1 GCZ 14 is the southern continuation of the interfluve between the valleys of the Wallington River and Meon (**Figure 27**).

6.12.2 Five GI interventions were located in this zone, none of which were selected for monitoring (Royal HaskoningDHV 2022, 2023). These are located outside of the Project Boundary (**Figure 27**).

Deposits

6.12.3 Geoarchaeological review of GI records identified c. 1.20m of Quaternary deposits above chalk bedrock in all interventions, divisible into two units. The basal Quaternary deposits were cream and mottled brown slightly gravelly silts containing sub-angular chalk clasts. Interpreted as chalk bedrock in the GI logs, their lithologies indicate that these are likely Pleistocene solifluction deposits. These were overlain by brown sandy clays containing sub-angular and sub-rounded flint and chalk clasts. These are recorded in GI logs as Holocene Alluvium, but their topographic location (on an interfluve) and their lithology demonstrates that these are not alluvium but are Slope Deposits (Head). They may either be Pleistocene Head or Holocene Colluvium.

6.12.4 Review of LiDAR data in the GDBA and GLC (Wessex Archaeology 2023a) highlighted several saucer-shaped depressions occur in this zone (**Figure 27**), indicative of the presence of solution features within the chalk bedrock, and which could preserve Pleistocene and/or Holocene sediments.

Table 19 GI interventions in GCZ 14

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes

2F3512RC	20.0	2	14	None	Slope Deposits (Head)	0.35–1.70	
2F3513DS	3.3	2	14	None	Slope Deposits (Head)	0.20–1.20	
2F3514DS	2.3	2	14	None	Slope Deposits (Head)	0.25–1.20	
2F3515DS	4.7	2	14	None	Slope Deposits (Head)	0.30–1.45	
2F3537DS	1.5	2	14	None	Slope Deposits (Head)	0.20–1.50+	

Palaeoenvironmental potential

6.12.5 The Slope Deposits recorded in GI interventions in this zone are likely to be calcareous and have potential to preserve molluscs and vertebrates. They include units that have been assigned a moderate palaeoenvironmental priority status (**Table 20**).

Table 20 Palaeoenvironmental potential - GI interventions in GCZ 14

GI Ref.	Depth - top (m bgl)	Depth - bottom (m bgl)	Lithology	Stratigraphy	Priority	Monitored?	Sampled?
2F3512RC	0.4	1.2	Gravelly Clays	Head Deposits	Moderate	No	No
2F3512RC	1.2	1.7	Gravelly Clays	Head Deposits	Moderate	No	No
2F3513DS	0.6	1.2	Chalk	Head Deposits	Moderate	No	No
2F3514DS	0.3	0.9	Sandy Gravelly Clays	Head Deposits	Moderate	No	No
2F3514DS	0.9	1.2	Sandy Gravelly Silt	Head Deposits	Moderate	No	No
2F3515DS	0.6	1.2	Clayey Gravelly Silt	Head Deposits	Moderate	No	No
2F3515DS	1.2	1.5	Gravelly Clays	Head Deposits	Moderate	No	No

6.13 GCZ 15

Introduction

6.13.1 GCZ 15 is the valley the River Meon, which is incised through Palaeogene bedrock at the western end of the Portsdown Anticline.

6.13.2 24 GI interventions were located within the Project Boundary in this zone (**Figure 27**). One was identified for archaeological monitoring, nine for geoarchaeological monitoring and six

for combined archaeological and geoarchaeological monitoring (Royal HaskoningDHV 2022, 2023, 2024).

Deposits

6.13.3 The combined results of the monitoring and geoarchaeological review of GI has identified Quaternary deposits comprising Pleistocene river terraces of different ages (**Table 21**), relatable to up to seven different Pleistocene terraces of the River Meon that are mapped by the BGS in the area (BGS GeoIndex), Slope Deposits (Head) and Holocene Alluvium. The following groups of Quaternary deposits were identified:

- Colluvium (Holocene)
- Slope Deposits (Head) (?Pleistocene)
- River Terrace 1 (Pleistocene)
- River Terrace 2 (Pleistocene)
- River Terrace 4 (Pleistocene)
- River Terraces 6/7 (Pleistocene)

6.13.4 The results of deposit modelling, illustrated through a transect providing a cross-section through the deposits (**Figure 27**), demonstrates the stratigraphic relationships between these groups of deposits. The ages of the different Pleistocene terraces are unknown, but given the number of different terraces, they are likely to cover a large period of time and to include deposits of both Lower and Middle Palaeolithic date.

Table 21 GI interventions in GCZ 15

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
2G4000SA	19.3	2	15	Geoarchaeological	River Terrace Deposits (Terrace 1)	0.05–4.50	
2G4001SA	14.3	2	15	Geoarchaeological	Alluvium	0.25–3.50	
2G4002DS	3.0	2	15	Geoarchaeological	Slope Deposits (Head)	0.40–1.20	
2G4003DS	4.0	2	15	Geoarchaeological	Slope Deposits (Head)	0.40–1.20	
2G4004DS	3.5	2	15	Geoarchaeological	Slope Deposits (Head)	0.40–1.45	
3G4022DS	3.6	3C	15	None	Slope Deposits (Head)	0.50–1.50	
					River Terrace Deposits (Terraces 6-7)	1.50–3.60+	

3G4023HP	1.2	3C	15	Archaeological	Possible River Terrace Deposits (Terraces 6-7)	0.30–0.60	
3G4024DS	6.5	3C	15	Archaeological and Geoarchaeological	River Terrace Deposits (Terraces 6-7)	0.30–1.70	
3G4037DS	6.0	3C	15	None	Possible Slope Deposits (Head)	1.20–1.80	Overlain by 0.20 –1.20m of Made Ground
					Possible River Terrace Deposits (Terraces 6-7)	1.80–3.65	
3G4038DS	6.5	3C	15	None	Possible Slope Deposits (Head)	0.30–1.30	
					Possible River Terrace Deposits (Terraces 6-7)	1.30–3.30	
3G4102SA	20.5	3C	15	Archaeological and Geoarchaeological	River Terrace Deposits (Terraces 6-7)	0.35–4.00	
3G4105SA	30.5	3C	15	Archaeological and Geoarchaeological	River Terrace Deposits (Terraces 6-7)	0.35–2.50	
3G4106SA	30.0	3C	15	Archaeological and Geoarchaeological	River Terrace Deposits (Terraces 6-7)	0.30–3.80	
3G7525IT	1.5	3C	15	Archaeological and Geoarchaeological	River Terrace Deposits (Terraces 6-7)	0.35–1.50+	
3G7530IT	2.5	3C	15	Archaeological and Geoarchaeological	River Terrace Deposits (Terraces 6-7)	0.35–2.50+	

3H4507HP	1.2	3C	15	None	?None		Possible Bedrock from 0.35–1.20
3H4600SA	20.0	3C	15	Geoarchaeological	River Terrace Deposits (Terraces 6-7)	0.40–3.00	
3H4602HP	1.1	3C	15	None	River Terrace Deposits (Terraces 6-7)	0.25–1.10+	
3W8532HP	1.2	3C	15	None	Possible Slope Deposits (Head)	0.25–0.70	
3W8534DS	4.0	3C	15	Geoarchaeological	River Terrace Deposits (Terraces 6-7)	2.20–4.00+	Overlain by 0.00 –2.20m of Made Ground
3W8535SA	20.1	3C	15	Geoarchaeological	Possible River Terrace Deposits (Terrace 2)	0.30–2.50	
3W8536SA	20.5	3C	15	None	River Terrace Deposits (Terrace 2)	0.35–3.60	
3W8538HP	1.2	3C	15	Geoarchaeological	River Terrace Deposits (Terraces 6-7)	0.50–1.20+	
3W8539DS	2.0	3C	15	Geoarchaeological	River Terrace Deposits (Terraces 6-7)	0.85–2.00+	Overlain by 0.00 –0.85m of Made Ground

River Terraces 6/7

6.13.5 The earliest Quaternary sediments are Pleistocene River Terrace Deposits that had basal elevations of c. 50–52m OD. These were encountered in GI interventions located within the Project Boundary to the west of the River Meon, in the north of GCZ 15. They are in areas where Terraces 6 and 7 are mapped by the BGS (GeoIndex). It is likely that more than one terrace is present in the GI data from this area, however as most interventions were less than 1.50m deep and did not reach the base of the terraces (different terraces can be identified based on their differing basal elevations), it is not possible to distinguish different terraces.

6.13.6 Where interventions extended through full sequences (e.g. 3G4038DS, 3G4102SA, 3G4105SA, 3G4106SA, and 3H4600SA), between c. 3.0–4.0m of terrace deposits were recorded. The River Terrace Deposits overlay Bedrock sands and clays of the Wittering

Formation and were beneath Topsoil. These River Terrace Deposits comprised bedded fluvial deposits that variably consisted of sandy sub-angular to sub-rounded flint gravels, sandy clayey gravels with fine to medium angular to sub-rounded flint, gravelly sands with pockets of clays, sandy gravelly clays and occasional sandy clay units. These lithologically varied sediments could include channel fills, braid bars and/or floodplain deposits.

River Terrace 4

6.13.7 Although not investigated by the GI program, and located outside of the Project Boundary, BGS deposit records (BGS GeoIndex) record Pleistocene terrace deposits immediately to the south of GCZ 15, south of the River Meon, with a base height of c. 38m OD (e.g. SU50NE254) (**Figures 27**–**28**). These are mapped at Terrace 4 of the Meon by the BGS (GeoIndex). Their elevation demonstrates that they are younger than Terrace 6/7 deposits investigated in GI in the area north of the River Meon (see above). Terrace 4 deposits at similar elevations could be present within areas of GCZ 15 within the Project Boundary to the north of the River Meon.

River Terrace 2

6.13.8 South of the Terrace 6/7 deposits (see above) GI interventions within the Project Boundary (e.g. 3W8535SA and 3W8536SA) encountered River Terrace Deposits with a base elevation of c. 20m OD (**Figures 27**–**28**). These likely equate with Terrace 2 of the River Meon, as mapped by the BGS (GeoIndex). There is a considerable gap in data coverage in the Project Boundary between these Terrace 2 and the Terrace 6/7 deposits (**Figures 27**–**28**), and it is likely that other terraces, potentially including Terrace 4 (see above), occur within this gap in these areas.

6.13.9 The Terrace 2 deposits occurred beneath topsoil and were c. 2.5–3.5m thick. These River Terrace Deposits had a stratigraphy that comprised of gravels overlain by gravelly silts and clays and silty clays. The basal gravels were sandy with fine to coarse flint clasts and pockets of silty clays. These are high energy fluvial sands and gravels that were likely deposited in a channel or as a braid bar. The overlying gravelly silty clays contained fine to medium sub-angular to sub-rounded flint clast, and are characteristic of fluvial, possibly floodplain, sediments. Units of silty clays identified at the top the sequences could be termed Head-Brickearth (see **section 2.5**) and may be fluvial or colluvial sediments.

River Terrace 1

6.13.10 South of the River Meon a single GI intervention (2G4000SA) within the Project Boundary recorded River Terrace Deposits with a base height of c. 15m OD (**Figures 27**–**28**). These are equated with Terrace 1 of the River Meon. They were bedded gravelly clays containing fine to coarse angular to sub-angular flint clasts.

Slope Deposits (Head)

6.13.11 Sequences of gravelly sandy clays containing sub-angular to sub-rounded flint clasts and clast-free sandy clays, which were generally c. 0.80–1.00m thick, were identified in GI locations within the Project Boundary on slopes, either directly above bedrock, or overlying River Terrace Deposits (**Table 21**).

6.13.12 These were mostly encountered in interventions which were not monitored. Geoarchaeological review of GI logs suggests that these comprise of sediments reworking the underlying earlier Pleistocene River Terrace Deposits and/or Bedrock through slope processes (solifluction, colluviation and/or slope wash). They likely include Pleistocene Head Deposits but could also include Holocene Colluvium.

Alluvium

6.13.13 One GI intervention (2G4001SA), which was located to the south of the Project Boundary (**Figures 27**) identified 3.25m of slightly gravelly clays and gravelly slightly clayey sands containing fine to coarse sub-angular to rounded flint clasts, above bedrock and beneath topsoil. These clays and sands are Holocene Alluvium.

Archaeology

6.13.14 No archaeology was identified at monitored locations in this zone.

Palaeoenvironmental potential

6.13.15 The River Terrace Deposits identified by the monitoring comprised sands and gravels with low palaeoenvironmental potential, which have been mostly assigned low palaeoenvironmental priority status (see **Appendix 6**). However, it should be noted that the GI interventions generally only encountered the tops of these deposits, and that the log for one unmonitored intervention (3G4038DS) records organic fragments within a sandy clayey gravel of River Terrace 6/7. These are likely reworked but indicate that deposits with higher potential could be present in terrace deposits within the Project Boundary. The Slope Deposits recorded are likely to be decalcified and have low priority status. No palaeoenvironmental samples were taken.

6.14 GCZ 16

6.14.1 GCZ 16 is the interfluve which separates the Meon Valley (GCZ 15) from a dry valley in GCZ 17 (**Figure 29**).

6.14.2 Two GI interventions were located in the north of this zone (**Table 22**), neither of which were selected for monitoring (Royal HaskoningDHV 2024).

6.14.3 The only Quaternary deposits identified in the geoarchaeological review of GI logs was a shallow (0.35m) sequence of Slope Deposits (Head) present in one intervention (3H4603HP). These may be Pleistocene Head Deposits or Holocene Colluvium. They have low palaeoenvironmental potential and have been assigned low palaeoenvironmental priority status (see **Appendix 6**).

Table 22 GI interventions in GCZ 16

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
3H4511HP	1.2	3C	16	None	None	-	
3H4603HP	1.2	3C	16	None	Possible Slope Deposits (Head)	0.30–0.75	

6.15 GCZ 17b

Introduction

6.15.1 GCZ 17b comprise the heads of dry valleys which to the west of the zone develop into an east bank tributary of the River Hamble (**Figure 29**).

6.15.2 Two GI interventions were located within the Project Boundary in GCZ 17b (**Figure 29**), one of which was identified for geoarchaeological monitoring (Royal HaskoningDHV 2022, 2023, 2024).

Deposits

6.15.3 The monitored intervention (3H4514HP) contained >0.90m of Slope Deposits (Head), beneath topsoil (**Table 23**). This contained two stratigraphic units. The lower comprised 0.60m+ of mottled orange and grey gravelly clay, containing fine sub-angular to subrounded flint clasts. This was overlain by 0.30m of orangish brown gravelly, slightly clayey fine to coarse sand containing fine to medium sub-angular to sub-rounded flint clasts. Both units are Slope Deposits, but the stratigraphic units may reflect Pleistocene Head, overlain by Holocene Colluvium.

Table 23 GI interventions in GCZ 17b

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
3H4514HP	1.2	3B	17b	Geoarchaeological	Slope Deposits (Head)	0.30–1.20+	
3H4513HP	1.2	3C	17b	None	?None		0.40–1.20m Possible Bedrock

6.15.4 A deposit modelling transect (**Figure 30**) demonstrates that these Slope Deposits are located on lower, northern slopes of the dry valley in this zone. LiDAR data demonstrates that a narrow channel-like feature is located at the centre of the mapped Head deposits within the Project Boundary in GCZ 17b (**Figure 29**). This could contain localised Holocene alluvial sediments, but this location was not investigated in the GI program.

Archaeology

6.15.5 Monitoring of 3H4514HP did not identify any archaeology.

Palaeoenvironmental potential

6.15.6 Only the top of the Slope Deposits in 3H4514HP were investigated by the GI. These were decalcified and of low palaeoenvironmental potential and have been assigned a low palaeoenvironmental priority status. No samples were taken.

6.16 GCZ 18

6.16.1 The Project Boundary in GCZ 18 crosses the interfluve between tributary valleys of the River Hamble (**Figure 29**).

6.16.2 Nine GI interventions were located in GCZ 18 (**Table 24**), none of which was identified for monitoring (Royal HaskoningDHV 2022, 2023, 2024).

6.16.3 Review of the GI logs indicates that Quaternary deposits were absent at most locations (**Table 24**), with thin (c. 0.50m) sequences of Slope Deposits (Head) occasionally present. These may be Pleistocene Head and/or Holocene Colluvium. They have low palaeoenvironmental potential and have been assigned a low palaeoenvironmental priority status (see **Appendix 6**).

Table 24 GI interventions in GCZ 18

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
2H4500DR	20.0	2	18	None	Slope Deposits (Head)	0.25–0.80	
2H4501DR	20.2	2	18	None	None	-	
2H4502DS	4	2	18	None	None		
2H4503DS	5.5	2	18	None	None		
3H4515HP	1.2	3B	18	None	None	-	
3H4606HP	1.2	3B	18	None	None	-	
3H4517SA	18.5	3C	18	None	None	-	
3J5002SA	20.0	3C	18	None	None	-	
3J5003HP	1.2	3C	18	None	Slope Deposits (Head)	0.35–0.90	

6.17 GCZ 19

Introduction

6.17.1 The Project boundary in GCZ 19 crosses the head of Kitnocks Gully, an east bank tributary of the River Hamble. Ten GI interventions were located in this zone (**Figure 29**), one of which was selected for geoarchaeological monitoring (Royal HaskoningDHV 2024).

Deposits

6.17.2 Geoarchaeological review of GI identified deep sequences of Slope Deposits (Head) (3J5004DS and 3J5007DS) (**Table 25**). A transect through deposit records (**Figure 30**) demonstrates that these Slope Deposits (Head) are located in a spur valley connected to Kitnocks Gully. Deep sequences (>3.0m) occurred in the GI interventions beneath up to 3.60m of made ground.

Table 25 GI interventions in GCZ 19

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
3J5012HP	1.2	3B	19	None	None	-	
3J5004DS	5.0	3C	19	None	Slope Deposits (Head)	2.00–5.00+	0.35–2.00 Made Ground
3J5007DS	6.5	3C	19	None	Slope Deposits (Head)	3.60–6.45+	0.00–3.60 Made Ground
3J5013HP	1.2	3C	19	None	None	-	

3J5014TP	3.8	3C	19	None	Unknown		0.00–3.80+ Made Ground
3J5015SA	10.5	3C	19	None	None	-	
3J5016TP	3.8	3C	19	None	None	-	
3J5017HP	1.2	3C	19	Geoarchaeological	None	-	
3J5101HP	1.2	3C	19	None	None	-	
3J5102HP	1.2	3C	19	None	None	-	

6.17.3 The Slope Deposits comprised light brown and light grey sandy, sometimes slightly gravelly clays, with occasional pockets of fine sand. The gravel was fine to coarse sub-angular to sub-rounded flint clasts. No clear stratigraphy was apparent. The deposits could be Holocene Colluvium or Pleistocene Head, and indicate the presence of deep sequences of Slope Deposits within Kitnocks Gully.

6.17.4 The Project Boundary crosses Kitnocks Gully in GCZ 19 and an area where the BGS (BGS GeoIndex) maps Holocene Alluvium and where narrow depressions likely relating to this watercourse are visible in LiDAR data (**Figure 29**). These alluvial deposits and locations were not investigated by the GI program.

6.17.5 The GI data indicates that to the north of Kitnocks Gully Quaternary deposits are absent from within the Project Boundary in this zone.

Palaeoenvironmental potential

6.17.6 The palaeoenvironmental potential of the Slope Deposits recorded in 3J5004DS and 3J5004DS is uncertain. Given the bedrock is London Clay and that the parent material for the Slope Deposits is likely to largely comprise sediments derived from the Whitecliff Sand Member, through which the valley containing Kitnocks Gully is incised, they may be decalcified and have low potential. However, given these are particularly deep sequences of Slope Deposits and were not monitored, direct geoarchaeological assessment is warranted. They have been assigned moderate palaeoenvironmental priority status (see **Appendix 6**).

6.18 GCZ 20

6.18.1 The Project Boundary in GCZ 20 includes the interfluves between the two spur valleys of Kitnocks Gully and the valley of the River Hamble (**Figure 29**).

6.18.2 Four GI interventions were located in GCZ 20 (**Table 26**), none of which were selected for monitoring (Royal HaskoningDHV 2022, 2023, 2024). Geoarchaeological review of GI records did not identify any Quaternary deposits, recording topsoil over bedrock.

Table 26 GI interventions in GCZ 20

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
3J5023HP	1.2	3B	20	None	None	-	
3J5028DS	1.2	3B	20	None	None	-	
3J5029DS	1.2	3B	20	None	None	-	

3J5027DS	8.5	3C	20	None	None	-	

6.19 GCZ 21

Introduction

6.19.1 The Project Boundary in GCZ 21 crosses the valley of the River Hamble and a landscape containing Pleistocene River Terrace Deposits (**Figure 31**). The number of GI interventions located in this part of the Project Boundary was limited, with five GI interventions all located in the south (**Figure 31**). Three were selected for geoarchaeological monitoring (Royal HaskoningDHV 2022, 2023).

Deposits

6.19.2 Two monitored interventions, one located to the south (2K5500SR) and one to north (2K5501SR) 2K5500SR) of the River Hamble encountered Pleistocene River Terrace Deposits (**Table 27**). The lithostratigraphic relationships are illustrated in a deposit modelling transect (**Figure 32**).

Table 27 GI interventions in GCZ 21

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
2K5500SR	20.2	2	21	Geoarchaeological	River Terrace Deposits	0.70–4.90	0.00–0.70 Made Ground
2K5501SR	20.0	2	21	Geoarchaeological	River Terrace Deposits	0.12–1.70	
3J5024HP	1.2	3B	21	Geoarchaeological	Possible Slope Deposits (Head)	0.30–1.20+	
3J5025HP	1.2	3B	21	None	None	-	
3J5026HP	1.2	3B	21	None	None	-	

6.19.3 In 2K5500SR the River Terrace Deposits were 4.20m in thick and comprised multiple units, including potentially bedded slightly sandy, gravelly clays. The gravel component in these sediments was sub-angular to sub-rounded flint. Lithologically the basal clastic material was flint, whilst further up the sequence both flint and chalk were noted. These sediments are fluvial and may principally be floodplain sediments, as opposed to sediments infilling a channel.

6.19.4 The terrace deposits recorded in 2K5501SR were thinner, with 1.60m of sediment above bedrock. The lithology of the terrace deposits was distinct from the 2K5500SR sediments, being slightly clayey angular to sub-angular flint gravel. Whilst also fluvial, these are more characteristic of material deposited within channels.

6.19.5 The BGS maps sequences of Pleistocene river terraces to the north of the monitored GI interventions, across the area of the Project Boundary within GCZ 21 (**Figure 32**). The distribution of the these mapped terrace deposits, the number of terraces present and their stratigraphic relationships to those recorded in the GI is uncertain and no deposit records are available.

6.19.6 The third monitored intervention was located on the southern slopes of the Hamble Valley (3J5024HP). Possible Slope Deposits comprising >0.90m of orangish brown slight sandy clays with fine to medium sub-angular to sub-rounded clast clasts were identified. These could be Pleistocene Head and/or Holocene Colluvium.

6.19.7 The GI logs from the two interventions not monitored recorded topsoil directly overlying bedrock.

Archaeology

6.19.8 No archaeology was identified at monitored locations in this zone.

Palaeoenvironmental potential

6.19.9 No Quaternary deposits with significant palaeoenvironmental potential were identified during the monitoring and all have been given low palaeoenvironmental priority status (see **Appendix 6**). No samples were taken.

6.20 GCZ 22a

6.20.1 Within GCZ 22a the Project Boundary crosses the valley of a small tributary of the River Hamble. One GI intervention was located in GCZ 22a, which was selected for geoarchaeological monitoring (Royal HaskoningDHV 2024). This intervention was at a location where Holocene alluvium is mapped by the BGS (**Figure 31**). No Quaternary deposits or archaeology were identified during the monitoring. However, 1.60m of Made Ground overlay Bedrock, which may indicate that previous impacts may have removed any Holocene Alluvium.

Table 28 GI interventions in GCZs 22a

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
3K5511DS	6.5	3C	22a	Geoarchaeological	None	-	0.00–1.60 Made Ground

6.21 GCZ 23

Introduction

6.21.1 GCZ 23 comprises a wide interfluve which separates the valley of the River Hamble from the Bow Lake Stream, a tributary of the River Itchen.48 GI interventions were recorded in this zone (**Figure 33**). One (3L6017HP) was identified for archaeological and geoarchaeological monitoring (Royal HaskoningDHV 2022, 2023, 2024).

Deposits

6.21.2 GI logs from across this zone recorded brown mottled orange and grey sandy silts and clays, sometimes containing sub-rounded flint clasts. These overlay London Clay Formation bedrock. Whilst often identified as Head Deposits in GI logs, geoarchaeological review of the logs indicates that the lithological descriptions of the sandy silts and clays are more consistent with Lambeth Group bedrock sediments. Lambeth Group deposits are mapped overlying London Clay Formation by the BGS to the north of these locations (**Figure 3**). The GI data thus suggest that remnant Lambeth Group deposits extend further south than is mapped by the BGS.

6.21.3 Geoarchaeological review of the GI data suggests that Quaternary deposits were absent in most GI locations (**Table 29**). Occasionally, alluvial silts and clays are recorded (2K5502DS, 2K5503DS, 2K5534DS, 2K5535DS, 3K5606SA). These are Holocene Alluvium relating to two small streams. The Alluvium recorded in one intervention in the east of GCZ23 (3K5606SA) relates to the upper reach of a small tributary of the River Hamble, identified in GCZ22b (see above).

Table 29 GI interventions in GCZ 23

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
2K5502DS	0.7	2	23	None	Alluvium	0.60–0.70+	0.15–0.60 Made Ground
2K5503DS	0.9	2	23	None	Alluvium	0.18–0.90+	
2K5534DS	0.7	2	23	None	Alluvium	0.17–0.70+	
2K5535DS	0.7	2	23	None	Alluvium	0.15–0.70+	
3K5515HP	1.2	3B	23	None	None	-	0.30–1.20+ Possible Lambeth Group Bedrock
3K5520CT	1.2	3B	23	None	None	-	0.20–1.00 Possible Lambeth Group Bedrock
3K5520CT-A	1.2	3B	23	None	None	-	0.30–1.20+ Possible Lambeth Group Bedrock
3K5521CT	1.2	3B	23	None	None	-	0.25–1.20+ Possible Lambeth Group Bedrock
3K5521CT-A	1.2	3B	23	None	None	-	0.25–1.20+ Possible Lambeth Group Bedrock
3K5524CT	1.2	3B	23	None	None	-	0.20–1.20+ Possible Lambeth Group Bedrock
3K5524CT-A	1.2	3B	23	None	None	-	0.20–1.20+ Possible Lambeth Group Bedrock
3K5525DR	30.5	3B	23	None	None	-	0.20–3.00 Possible Lambeth Group Bedrock

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
3K5527DR	8.5	3B	23	None	None	-	0.15–2.50 Possible Lambeth Group Bedrock
3K5529HP	1.2	3B	23	None	None	-	
3K5540CT	1.2	3B	23	None	None	-	
3K5540CT-A	1.2	3B	23	None	None	-	0.20–1.20+ Possible Lambeth Group Bedrock
3K5541CT	1.2	3B	23	None	None	-	0.15–1.20+ Possible Lambeth Group Bedrock
3K5541CT-A	1.2	3B	23	None	None	-	0.20–1.20+ Possible Lambeth Group Bedrock
3K5606SA	20.5	3B	23	None	Alluvium	0.15–0.80	
3K5607HP	1.2	3B	23	None	None	-	0.30–0.80+ Possible Lambeth Group Bedrock
3K5608HP	1.2	3B	23	None	None	-	0.35–1.20+ Possible Lambeth Group Bedrock
3K7541IT	2.5	3B	23	None	None	-	0.25–0.90 Possible Lambeth Group Bedrock
3K7542IT	2.5	3B	23	None	None	-	0.55–1.20 Possible Lambeth Group Bedrock
3K7543IT	2.5	3B	23	None	None	-	0.30–0.75 Possible Lambeth Group Bedrock
3K7544IT	2.5	3B	23	None	None	-	0.25–1.20 Possible Lambeth Group Bedrock
3K7545IT	2.5	3B	23	None	None	-	0.25–1.45 Possible Lambeth Group Bedrock
3K7546IT	2.5	3B	23	None	None	-	0.30–1.30 Possible Lambeth Group Bedrock

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
3K5513HP	1.2	3C	23	None	None	-	0.20–1.20+ Possible Lambeth Group Bedrock
3K5530HP	1.2	3C	23	None	None	-	
3K5531DS	6.5	3C	23	None	None	-	0.15–1.65 Possible Lambeth Group Bedrock
3K5604HP	1.2	3C	23	None	None	-	0.25–1.20+ Possible Lambeth Group Bedrock
3K5609HP	1.2	3C	23	None	None	-	0.30–1.20+ Possible Lambeth Group Bedrock
3K5610HP	1.2	3C	23	None	None	-	0.30–1.20+ Possible Lambeth Group Bedrock
3L6013HP	1.2	3C	23	None	None	-	0.15–1.20+ Possible Lambeth Group Bedrock
3L6015HP	1.2	3C	23	None	None	-	0.35–1.20+ Possible Lambeth Group Bedrock
3L6017HP	1.2	3C	23	Archaeological and Geoarchaeological	None	-	0.30–1.20+ Possible Lambeth Group Bedrock
3L6023HP	1,2	3C	23	None	None	-	0.30–1.20+ Possible Lambeth Group Bedrock
3L6024	0.2	3C	23	None	None	-	
3L6024HP-A	0.2	3C	23	None	None	-	
3L6024HP-B	1.2	3C	23	None	None	-	
3L6100HP	1.2	3C	23	None	None	-	0.30–1.40+ Possible Lambeth Group Bedrock
3L6101DS	6.5	3C	23	None	None	-	0.29–2.00 Possible Lambeth Group Bedrock

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
3L6102HP	1.2	3C	23	None	None	-	0.30–1.20+ Possible Lambeth Group Bedrock
3L6103HP	1.2	3C	23	None	None	-	0.30–1.20+ Possible Lambeth Group Bedrock
3L6104HP	1.2	3C	23	None	None	-	0.25–1.20+ Possible Lambeth Group Bedrock
3L6105HP	1.2	3C	23	None	None	-	
3L6106DS	6.5	3C	23	None	None	-	
3L6107DS	6.5	3C	23	None	None	-	

Archaeology

6.21.4 No archaeology was identified at monitored locations in this zone.

Palaeoenvironmental potential

6.21.5 The minerogenic alluvial sediments identified in 2K5502DS, 2K5503DS, 2K5534DS and 3K5606SA have low palaeoenvironmental potential and have been assigned low palaeoenvironmental priority status (see **Appendix 6**).

6.22 GCZ 24

Introduction

6.22.1 Within GCZ 24 the Project Boundary crosses the valley of the Bow Lake Stream.

6.22.2 15 GI interventions were located in this zone (**Figure 33**). Five were selected for archaeological monitoring, one for geoarchaeological monitoring and seven for combined archaeological and geoarchaeological monitoring (Royal HaskoningDHV 2022, 2023, 2024).

Deposits

6.22.3 In locations on the edges of the valley of the Bow Lake Stream the monitoring and geoarchaeological review of GI data identified Quaternary deposits comprising Slope Deposits (Head). Within the base of the valley Holocene Alluvium was recorded (**Table 30**). In both cases these deposits directly overlay bedrock. The stratigraphic relationships between these deposits are illustrated by a deposit model transect (**Figure 34**).

Table 30 GI interventions in GCZ 24

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
2L6000TP	4.0	2	24	Archaeological	None	--	

2L6001TP	2.6	2	24	Archaeological	None	-	
2L6002SA	15.5	2	24	Geoarchaeological	Slope Deposits (Head)	0.25–1.50	
2L6003SA	15.5	2	24	Archaeological and Geoarchaeological	Slope Deposits (Head)	0.15–3.55	
2L6004TP	3.9	2	24	Archaeological	Slope Deposits (Head)	0.30–1.80	
2L6005SA	10.0	2	24	Archaeological and Geoarchaeological	Slope Deposits (Head)	0.70–2.40	
2L6006TP	2.4	2	24	Archaeological	Slope Deposits (Head)	0.30–1.40	
2L6007DR	20.0	2	24	Archaeological and Geoarchaeological	Alluvium	0.20–2.00	
2L6008DR	20.1	2	24	Archaeological and Geoarchaeological	Alluvium	0.30–2.75	
2L6009DR	20.0	2	24	Archaeological and Geoarchaeological	Alluvium	0.40–2.55	
2L6010DR	20.0	2	24	Archaeological and Geoarchaeological	Alluvium	0.40–3.90	
3L6028HP	1.2	3B	24	Archaeological and Geoarchaeological	None	-	
3L6029HP	1.2	3B	24	None	None	-	
3L6026HP	1.2	3C	24	None	None	-	
3L6027HP	1.2	3C	24	None	None	-	

6.22.4 Slope Deposits (Head) ranged from less than 1.0m to up to 3.4m thick. The distinction between these deposits and the clays of the underlying Palaeogene bedrock (which would have provided the principal parent material) was sometimes not clear, and the deeper records may be overestimates. The Slope Deposits generally comprised sandy clays, sometimes with gravelly units containing sub-angular to sub-rounded flint clasts.

6.22.5 The GDBA and GLC demonstrated that it is unlikely that the valley of the Bow Lake Stream contains Pleistocene river terraces (Wessex Archaeology 2023a), and is therefore likely that the Bow Lake Stream drainage system formed at the end of the Pleistocene or during the Holocene. Consequently, whilst the Slope Deposits are undated, they are most likely to date to the late Pleistocene/Holocene; they may entirely comprise of Holocene Colluvium.

6.22.6 The Alluvium dates to the Holocene. Up to 2.5–3.0m of alluvial gravelly clays and clays were recorded, sometimes with fine sand partings and sandy gravel layers. Occasional organic fragments within these sediments were noted (2L6007DR and 2L6008DR). These are reworked, detrital organic remains, but may be indicative of in situ organic units being present elsewhere within the Project Boundary. Review of LiDAR data (Wessex

Archaeology 2023a) has identified several palaeochannels that are visible on the southern side of the alluvial corridor of the Bow Lake Stream in GCZ 24 (**Figure 33**). These are mostly located to the south of the Project Boundary, although one of these features crosses the Project boundary between GI interventions 2L6008DR and 276007DR. These features were not directly investigated during the GI works.

6.22.7 GI data indicates that in the east of the zone (east of GI intervention 2L6001TP) Quaternary deposits are largely absent, although the Project in this area does cross locations where Holocene Alluvium associated with small tributaries of the Bow Lake Stream are mapped (**Figure 33**).

Archaeology

6.22.8 No archaeology was identified at monitored locations in this zone.

Palaeoenvironmental potential

6.22.9 The Slope Deposits studied during the monitoring were decalcified and had low palaeoenvironmental potential. Organic material was identified within the alluvial sediments, but this was detrital and has been reworked. It therefore has low palaeoenvironmental potential. All deposits recorded have been assigned low palaeoenvironmental priority status (see **Appendix 6**) and no samples were taken.

6.23 GCZ 25

6.23.1 The Project Boundary in GCZ 25 crosses the interfluve between the valleys of the Bow Lake Stream and River Itchen. One GI intervention was located in this zone (**Figure 35**). This was not identified for monitoring (Royal HaskoningDHV 2022, 2023).

6.23.2 Geoarchaeological review of the GI logs identified 0.45m of Slope Deposits (Head) comprising mottled brown and orangish brown slightly gravelly clays containing sub-angular and subrounded chalk clasts, overlying bedrock (**Table 31**). The Slope Deposits are likely to be Holocene Colluvium. They are likely to be decalcified and have low palaeoenvironmental potential and have been given a low palaeoenvironmental priority status.

Table 31 GI interventions in GCZ 25

GI Ref.	Depth (m bgl)	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
3L6044HP	1.2	3B	25	None	Slope Deposits (Head)	0.14–0.59	

6.24 GCZ 26

Introduction

6.24.1 The Project Boundary within GCZ 26 crosses the valley of the River Itchen and a west bank tributary, the Otter Bourne.

6.24.2 28 inventions were located in this zone (**Figure 35**). Eight were selected for geoarchaeological monitoring and six for combined archaeological and geoarchaeological monitoring.

Deposits

6.24.3 Monitoring and geoarchaeological review identified a range of Quaternary deposits located within the Project Boundary in GCZ 26, including several different Pleistocene river terraces of the Itchen (**Table 32**). These terraces are related to terraces mapped by the BGS (BGS GeoIndex). These deposits are illustrated in two deposit modelling transects (**Figures 36**–**37**), and comprised:

- Alluvium (Holocene)
- Slope Deposits (Head) (?Pleistocene)
- Sands and Gravels (Pleistocene)
- River Terrace 1 (Pleistocene)

6.24.4 River Terrace 3 (Pleistocene)

Table 32 GI interventions in GCZ 26

GI Ref.	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
BH501	1	26	Geoarchaeological	River Terrace Deposits (Terrace 1)	0.40–3.50	
BH502	1	26	Geoarchaeological	Sands and Gravels	0.55–4.25	
BH503	1	26	None	Slope Deposits (Head)	0.20–1.00	
				River Terrace Deposits (Terrace 1)	1.00–2.10	
BH504	1	26	None	Slope Deposits (Head)	0.25–1.20	
				River Terrace Deposits (Terrace 1)	1.20–2.89	
TP501	1	26	Geoarchaeological	Slope Deposits (Head)	0.25–0.50	
				River Terrace Deposits (Terrace 1)	0.50–1.50+	
TP502	1	26	Geoarchaeological	Slope Deposits (Head)	0.25–0.60	
				River Terrace Deposits (Terrace 1)	0.60–1.60+	
TP503	1	26	Geoarchaeological	Slope Deposits (Head)	0.20–0.45	

GI Ref.	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
				River Terrace Deposits (Terrace 1)	0.45–1.40+	
TP504	1	26	Archaeological and Geoarchaeological	Slope Deposits (Head)	0.20–0.70	
				River Terrace Deposits (Terrace 1)	0.70–1.50	
TP505	1	26	Archaeological and Geoarchaeological	River Terrace Deposits (Terrace 1)	0.70–1.60	
TP506	1	26	Archaeological and Geoarchaeological	Slope Deposits (Head)	0.40–0.75	
				River Terrace Deposits (Terrace 1)	0.75–1.50	
TP507	1	26	Archaeological and Geoarchaeological	Slope Deposits (Head)	0.20–1.40	
TP508	1	26	Archaeological and Geoarchaeological	Slope Deposits (Head)	0.35–1.40	
TP509	1	26	Archaeological and Geoarchaeological	Slope Deposits (Head)	0.36–1.00	
2L6011SR	2	26	Geoarchaeological	River Terrace Deposits (Terrace 1)	0.50–2.40	
2L6012SR	2	26	None	River Terrace Deposits (Terrace 1)	0.15–3.00	
2M6507SA	2	26	Geoarchaeological	Alluvium	0.30–1.90	
				River Terrace Deposits (Terrace 1)	1.90–5.70	
2M6508SA	2	26	Geoarchaeological	Alluvium	0.30–2.55	
				River Terrace Deposits (Terrace 1)	2.55–4.50	
BH505	3A	26	Archaeological and Geoarchaeological	Alluvium	0.35–0.60	
				Sands and Gravels	0.60–5.45	

GI Ref.	GI Phase	GCZ	Monitoring?	Quaternary deposits	Depth of Quaternary deposits (m bgl))	Notes
BH506	3A	26	Geoarchaeological	Slope Deposits (Head)	0.40–1.00	
				River Terrace Deposits (Terrace 1)	1.00–2.60	
BH507	3A	26	None	Unknown		0.35–1.75+ Made Ground
BH507A	3A	26	None	Unknown		0.35–1.40+ Made Ground
BH507B	3A	26	None	Unknown		0.20–1.90+ Made Ground
BH507C	3A	26	None	Alluvium	1.20–3.60	0.00–1.20 Made Ground
BH507D	3A	26	None	Alluvium	0.86–3.40	0.00–0.86 Made Ground
3M6517HP	3B	26	None	Possible Slope Deposits (Head)	0.48–1.20+	
3L6045HP	3C	26	None	None		
3L6046HP	3C	26	None	Slope Deposits (Head)	0.43–0.95	
				River Terrace Deposits (Terrace 3)	0.95–1.20+	
3M6601HP	3C	26	None	None		

Terrace 3

6.24.5 The earliest Quaternary deposits recorded within the Project Boundary belong to River Terrace Deposits mapped as Terrace 3 by the BGS. The top of these deposits was investigated in a single intervention (3L6046HP) located in the east of GCZ 26 (**Figure 35**). The intervention recorded the top of the terrace, which comprised sandy clayey gravels containing fine to coarse sub-angular to sub-rounded flint clasts. These terrace deposits were at c. 36m OD (**Figure 36**) and are undated.

Terrace 1

6.24.6 River Terrace deposits with a consistent basal elevation of c. 16.5–20.5m OD were widely recorded in GI interventions located both east and west of the River Itchen within the Project Boundary. Available deposit records suggest that these sediments belong to a single Itchen terrace (**Figures 36**–**37**), although increases in basal heights at the eastern and western ends of their recorded lateral extent may indicate the transition to a higher, earlier terrace. These terrace deposits are all mapped by the BGS as Terrace 1. Their age is unknown, but the c. 15m gap in heights between these and Terrace 3 (see above) indicates a significant time-gap between the two terraces.

6.24.7 The Terrace 1 deposits recorded ranged from 1.80–4.75m in thickness. These River Terrace Deposits generally comprised fine to coarse angular to sub-angular flint gravel in sandy, sometime slightly silt and/or clay sand, matrices. In some interventions the sandy gravel was noted to become increasingly coarse and clast dominated with depth. These sandy gravels are characteristic of high energy fluvial deposition, likely within braided and intercutting channels.

6.24.8 In two interventions (2M6507SA and 2M6508SA) the terrace deposits were gravelly sandy clays containing fine to coarse angular to sub-angular flint clasts; these may indicate a different depositional context – potentially banks and bars of a river.

Sands and Gravels

6.24.9 In two interventions within the Project Boundary (BH502 and BH505) fluvial Sands and Gravels were identified below the level of the Holocene floodplain, with basal heights (c. 11.5–12.5m OD) lower than those of River Terrace 1. These Sands and Gravels are likely to be younger than Terrace 1 and to date to the late Pleistocene.

6.24.10 The Sands and Gravels comprised bedded sandy gravels, composed of fine to coarse, angular to sub-rounded flint clasts and fine to coarse sands. They are characteristic of high energy fluvial sands and gravels and are likely to belong to a braided river system formed in periglacial environments at the end of the Pleistocene, likely during the Last Glacial period (MIS 2; 29 –11.7 Kya).

Slope Deposits (Head)

6.24.11 In nine interventions within the Project Boundary (TP501, TP502, TP503, TP504, TP506, TP507, TP508, TP509 and 3L6046HP) Pleistocene River Terrace Deposits were unconformably overlain by 0.20–1.20m of sandy clays and gravelly sandy clays. These are likely Pleistocene Slope Deposits (Head) but could also include Holocene Colluvium. They likely include the cryoturbated and soliflucted tops of the terrace deposits, reflecting periglacial processes post-dating the Pleistocene fluvial deposits and/or colluvial deposits.

Alluvium

6.24.12 Three interventions within the Project Boundary (BH505, 2M6507SA and 2M6508SA) recorded 0.60–2.30m of slightly gravelly (fine to medium angular to angular flint and chalk) clay sands overlay the Pleistocene fluvial deposits. These are minerogenic Holocene floodplain Alluvium of the Itchen (BH505) and Otter Bourne (2M6507SA and 2M6508SA).

6.24.13 Beneath the Itchen floodplain a 2.44m deep sequence of grey sandy silts, in the base of which organic material was noted, was recorded above bedrock in two interventions (BH507C and BH507D). These interventions were not geoarchaeologically monitored, but these are Holocene alluvial sediments, which may be within a paleochannel.

6.24.14 Although not identified in GI interventions, BGS deposit records from south of the Project Boundary (e.g. SE42SE34) locally recorded peats within the Holocene Alluvium, indicating that these deposits could occur within Alluvium located within the Project Boundary. Additionally, BGS deposit records from locations north of the Project Boundary (e.g. SU2SE74), where the underlying bedrock is chalk, record tufa in the Alluvium. Such tufa deposits could potentially occur at the northern limit of the Project Boundary within GCZ 26 where the underlying bedrock transitions from Paleogene sediments to chalk.

Archaeology

6.24.15 No archaeology was identified at monitored locations in this zone.

Palaeoenvironmental potential

6.24.16 The River Terrace Deposits recorded were all sands and gravels with low palaeoenvironmental potential. Similarly, the Slope Deposits are likely decalcified and have low potential. For both sets of deposits all units have been assigned a low palaeoenvironmental priority status (see **Appendix 6**). No samples were taken during monitoring.

6.24.17 The presence of organic deposits within a possible paleochannel fill within the Holocene alluvium in BH507C and BH507D indicates that this fill has palaeoenvironmental potential and the unit has been given a moderate palaeoenvironmental priority status. These boreholes were not monitored, and it is unlikely that suitable samples for assessment could have been recovered from these cable percussion boreholes.

7 DISCUSSION

7.1 Introduction

7.1.1 No archaeology was identified during the monitoring. However, the geoarchaeological monitoring and geoarchaeological review of GI logs has identified a range of Quaternary geological deposits within defined areas which have the potential to contain significant geoarchaeological evidence, including archaeology and palaeoenvironmental datasets reflective of past landscapes and environments.

7.1.2 The geoarchaeological potential of the geological deposits in 28 Geoarchaeological Character Zones (GCZs) across the Project's EIA Scoping Area has been provided previously in a Geoarchaeological Desk-based Assessment (GDBA) and Geoarchaeological Landscape Characterisation (GLC) (Wessex Archaeology 2023a), which utilised Phase 0, Phase 1 and Phase 2 GI data. The following section discusses the results the GI monitoring, framed within the GCZs established by the GLC, applied to the Project Boundary. The results have been utilised alongside outline Project plans for development within the Project Boundary (Southern Water 2024) to provide an assessment of the Quaternary geoarchaeological resource that is likely to be impacted on by the Project.

7.1.3 Geoarchaeological potential rating has been assigned to the Quaternary deposits identified within the Project Boundary, representing a measure of probability. This has been determined via the application of professional judgement, informed by the evidence from the GI monitoring itself, and equivalent deposits in the surrounding area. Potential to preserve both archaeology (artefacts, archaeological layers etc) and significant paleoenvironmental remains is included within this assessment. '*Potential'* is expressed on a four-point scale, assigned in accordance with the following criteria:

- **High** Situations where evidence is known or strongly suspected to be present within deposits and which are likely to be well preserved.
- **Moderate** Includes cases where there are grounds for believing that evidence may be present, but for which conclusive evidence is not currently available.
- **Low** Circumstances where the available information indicates that evidence is unlikely to be present, or that their state of preservation is liable to be severely compromised.

- **Unknown** Cases where currently available information does not provide sufficient evidence on which to provide an informed assessment with regard to the potential for material to be present.

7.2 GCZ 1b

Geoarchaeological resource

7.2.1 GCZ 1b comprises elevated locations above the valley of a tributary of the Hermitage Stream (**Figure 6**). The GDBA and GLC considered it unlikely that Quaternary deposits with significant geoarchaeological potential are present in these zones (Wessex Archaeology 2023a).

7.2.2 GI interventions in this zone were restricted to a small number of interventions in the south and north of the Project Boundary, with GCZ1b and located towards GCZ 2 (**Figure 6**). These demonstrated that Quaternary deposits comprising Pleistocene and/or Holocene Slope Deposits and Holocene Alluvium of a tributary stream of the Hermitage Stream occur in these areas. These deposits are the lateral edges of those which define GCZ 2, and indicate that the boundary of GCZ 2 requires revision (**Figure 38**). The assessed geoarchaeological potential of these deposits is outlined below. This revision places the remainder of GCZ 1b outside of the Project Boundary (**Figure 38**).

Project impacts

7.2.3 Outline Project plans for development within the Project Boundary in this area (Southern Water 2024) suggest that there will be no Project impacts in this zone.

7.3 GCZ 2

Geoarchaeological resource

7.3.1 The Project boundary crosses this zone (**Figure 6**). GI data coverage within this area of the Project, which includes the valley of a tributary of the Hermitage Stream, was restricted to a single intervention. This recorded Pleistocene/Holocene Slope Deposits within a tributary valley of the Hermitage Stream, equivalent with those recorded in GCZ 1b. A GI intervention in GCZ 1b (BH107) identified minerogenic alluvial sediments of the tributary watercourse of the Hermitage Stream. These alluvial deposits are likely also to be present along the margins of this watercourse in the Project boundary within GCZ 2.

7.3.2 There is no archaeology that can be directly associated with the Pleistocene/Holocene Slope Deposits and it is unclear whether they include both Pleistocene and Holocene sediments. However, Mesolithic artefacts are recorded in the wider area from the upper slopes of dry valleys where Head deposits are mapped by the BGS and, although contextual information is lacking, these may be from within Holocene Slope Deposits (Wessex Archaeology 2021a). The Head deposits from where this Mesolithic archaeology was recovered are the continuation of the Pleistocene/Holocene Slope Deposits present in GCZ 2. This indicates that these deposits within the Project Boundary in GCZ 2 have Mesolithic archaeological potential. Such archaeology could include in situ lithic scatters on buried landsurfaces that are within, or sealed by, the Slope Deposits and/or artefacts reworked within the Slope Deposits. If these Slope Deposits include Pleistocene Deposits, they could similarly contain Palaeolithic lithic scatters and/or reworked artefacts.

7.3.3 No archaeology has been identified which can be related to the Holocene Alluvium of the Hermitage Stream area and data coverage is insufficient to assess their potential to contain geoarchaeological deposits associated with archaeology within the Site Boundary.

7.3.4 Both the Slope Deposits and minerogenic Alluvium of the tributary of the Hermitage Stream recorded in GI interventions are unlikely to preserve significant palaeoenvironmental evidence. The Slope Deposits likely mostly derive from Palaeogene bedrock sediments. Consequently, across the Project Boundary these are likely to be decalcified and to have low palaeoenvironmental potential, although any buried soils would have potential to preserve evidence, such as pollen. Data coverage is insufficient to assess the palaeoenvironmental potential of the Holocene Alluvium across the Project Boundary in this zone. Whilst the deposits recorded in the single GI intervention are minerogenic and have low potential, peats with higher potential could be present elsewhere within the Project Boundary.

7.3.5 The geoarchaeological potential of the Quaternary deposits within the Project Boundary in GCZ 2 is summarised in **Table 33**.

Table 33 Geoarchaeological potential of Quaternary deposits in GCZ 2

GCZ	Quaternary deposits	Geoarchaeological potential – Archaeology	Geoarchaeological potential – Palaeoenvironmental
2	Holocene Alluvium	Unknown	Low (minerogenic sediments) High (localised peats)
	Pleistocene / Holocene Slope Deposits (Head / Colluvium)	Moderate	Low
	Stable surfaces within/beneath Slope Deposits	Moderate	Moderate

Project impacts

7.3.6 Outline Project plans for development in this zone (Southern Water 2024) suggest that impacts will be an open cut pipeline trench and a construction compound, both located in the north of the zone, with a tunnelled pipeline to the south (**Figure 38**). This suggests that, if the tunnelled pipeline is installed through bedrock, Quaternary deposits are only likely to be impacted on by the open pipeline trench, pipeline tunnel entrances/shafts and, dependent on construction requirements, the compound. The specific deposits present in the proposed locations of the open pipeline trench and compound are uncertain, but it is likely that Slope Deposits and Holocene Alluvium will be present.

7.4 GCZ 3

Geoarchaeological resource

7.4.1 Whilst within the Site Boundary, no GI interventions were located in this GCZ. The GDBA and GLC (Wessex Archaeology 2023a) identified this zone as containing a valley with a minor watercourse that forms a north bank tributary of the Hermitage Stream. No information was available regarding the deposits in this zone or any associated archaeology, but any deposits present are likely to be similar to those in GCZ 2.

7.4.2 The assessment of geoarchaeological potential provided in the GDBA and GLC (Wessex Archaeology 2023a) is summarised in **Table 34**.

Table 34 Geoarchaeological potential of Quaternary deposits in GCZ 3

GCZ	Quaternary deposits	Geoarchaeological potential – Archaeology	Geoarchaeological potential – Palaeoenvironmental

3	Holocene Alluvium	Unknown	Low (minerogenic sediments) High (localised peats)
	Pleistocene / Holocene Slope Deposits (Head / Colluvium)	Moderate	Low
	Stable surfaces within/beneath Slope Deposits	Moderate	Moderate

Project impacts

7.4.3 Outline Project plans for development in this zone (Southern Water 2024) indicate that there will be no Project impacts (**Figure 38**).

7.5 GCZs 4a and 4b

Geoarchaeological resource

7.5.1 The Project Boundary traverses GCZ 4a and GCZ 4b. A single GI intervention was located in the north of the Project Boundary in the north of GCZ 4a (BH106). This recorded a sequence of Slope Deposits equivalent to those in interventions located in GCZ 2 (see above). Further south in the zone a BGS borehole (SU70NW69) identified minerogenic alluvium overlying possible Slope Deposits. The data, although limited, suggests that the same range of Quaternary deposits occur within the Project Boundary within GCZ 4a and 4b as in GCZ 2, with similar archaeological potential. This geoarchaeological potential is summarised in **Table 35**.

Table 35 Geoarchaeological potential of Quaternary deposits in GCZs 4a and 4b

GCZ	Quaternary deposits	Geoarchaeological potential – Archaeology	Geoarchaeological potential – Palaeoenvironmental
4a-b	Holocene Alluvium	Unknown	Low (minerogenic sediments) High (localised peats)
	Pleistocene / Holocene Slope Deposits (Head / Colluvium)	Moderate	Low
	Stable surfaces within/beneath Slope Deposits	Moderate	Moderate

Project impacts

7.5.2 Outline Project plans for development in these zones (Southern Water 2024) indicate that Project impacts will comprise a tunnelled pipeline and any impacts associated with Portsmouth water pipelines between Bedhampton Springs and Havant Thicket Reservoir, which sit outside of the Project (**Figure 39**). If tunnelled through bedrock, this suggests that Project impacts in this zone will be localised and is only likely to impact on the Quaternary deposits where they are present in the area of tunnel entrance/shafts.

7.6 GCZs 5b and 5c

Geoarchaeological resource

7.6.1 The GI monitoring has demonstrated that the Project Boundary crosses Pleistocene Raised Beach Deposits in these zones, which have not previously been recorded in this area and are not mapped by the BGS. These are overlain by Pleistocene Slope Deposits (Head). The Raised Beach Deposits likely belong to the Brighton-Norton Raised Beach that has been

dated through Optically Stimulated Luminescence (OSL) dating to late MIS 7 to MIS 6 (220–170 Kya; Bates et al. 2010). This corresponds with the early Middle Palaeolithic, a key period for early human activity in the UK.

7.6.2 No Palaeolithic archaeology has been identified which can be attributed to the Pleistocene Raised Beach and/or Head deposits in these areas. However, these deposits have not previously been recognised or investigated and could contain Middle Palaeolithic archaeology, which could include in situ archaeology as demonstrated by sites within other raised beach sequences, such as those associated with the Westbourne-Arundel Raised Beach (for example at Red Barns and Boxgrove, Amey's Eartham Pit; see **Section 2.5**).

7.6.3 Although no GI interventions containing the Raised Beach Deposits were geoarchaeologically monitored, log review demonstrated that they contain finer-grained units which have potential to contain significant paleoenvironmental evidence (molluscs/vertebrates, ostracods foraminifera, diatoms and pollen). These sandy units are also suitable for luminescence dating. The overlying Head Deposits could be calcareous and could contain palaeoenvironmental evidence, including vertebrates and molluscs.

7.6.4 Geoarchaeological review of GI boreholes identified up to 7.65m of Raised Beach deposits within the Project Boundary. These included finer grained sandy clays overlain by gravels. This may reflect marine transgression over time, with a lower set of brackish water estuarine sediments. Such estuarine locations would have been suitable for Palaeolithic occupation and suggest significant potential for Middle Palaeolithic archaeology.

7.6.5 The specific depositional environments represented by these sediments require investigating (detailed lithostratigraphy and assessment for palaeoenvironmental evidence indicative of environmental conditions). Finer grained (sandy clays) units within the Raised Beach sequences have potential preserve palaeoenvironmental evidence (e.g. ostracods, foraminifera, and pollen). These finer-grained sandy units would also be suitable for luminescence dating.

7.6.6 GI interventions containing Raised Beach Deposits were not identified for geoarchaeological monitoring (Royal HaskoningDHV 2022, 2023) and no samples suitable for assessing the palaeoenvironmental of these deposits are available.

7.6.7 The geoarchaeological potential of the Quaternary deposits identified within the Project Boundary in these zones is summarised in **Table 36**.

Table 36 Geoarchaeological potential of Quaternary deposits within the Project boundary in GCZ 5b and 5c

GCZ	Quaternary deposits	Geoarchaeological potential – Archaeology	Geoarchaeological potential – Palaeoenvironmental
5b-c	Pleistocene Slope Deposits (Head)	Unknown	Moderate
	Stable surfaces within Pleistocene Slope Deposits (Head)	Unknown	Moderate
	Pleistocene Raised Beach Deposits	Unknown	High

Project impacts

7.6.8 Outline Project plans for development in these zones (Southern Water 2024) indicate that Project impacts will comprise a tunnelled pipeline and a compound to be located in GCZ 5b (**Figure 39**). This suggests that development impacts which will impact on the Head and Raised Beach Deposits in these zones will be localised to tunnel entrances/shafts. In GI logs these deposits generally occurred beneath topsoil and extended to a depth of 7.50 bgl. This suggests that tunnel entrances/shafts will impact on complete sequences through the Head and Raised Beach sequences, whilst, dependent on construction requirements, compounds will likely impact on the upper units.

7.7 GCZ 6

Geoarchaeological resource

7.7.1 GI monitoring has demonstrated that a range of Quaternary deposits are present in this zone within the Project Boundary. These are located within a basin formed within the underlying chalk bedrock. The deposits infilling this basin were first identified during an earlier phase of Project GI (Phase 0; Wessex Archaeology 2022) and their distribution was modelled in the GDBA and GLC through review of this data, combined with BGS deposit records (Wessex Archaeology 2023a). This information has been augmented by data from the current monitoring, which allows an assessment of their geoarchaeological potential. The results of this assessment are provided below, and summarised in **Table 37.**

Table 37 Geoarchaeological potential of Quaternary deposits in GCZ 6

GCZ	Quaternary deposits	Geoarchaeological potential – Archaeology	Geoarchaeological potential – Palaeoenvironmental
6	Holocene Alluvium	Unknown	Low (minerogenic sediments) High (localised peats)
	Holocene Clays	Moderate	Low (minerogenic sediments) High (localised peats)
	?Pleistocene Gravelly Clays	Unknown	Moderate
	Pleistocene Gravels	Unknown	?Low
	Pleistocene Chalky Silts and Gravels	Unknown	High

Chalky Silts and Gravels

7.7.2 The basal Quaternary deposits infilling the basin are chalky silts and gravels. Similar deposits have been identified and investigated at Warblington, located to the east of the Project Boundary (Bates et al. 2009, 2010). Those within the Project Boundary have not previously been studied.

7.7.3 At Warblington similar sediments have been shown to have significant geoarchaeological potential (Bates et al. 2009, 2010). The Warblington sediments are Pleistocene cold stage freshwater deposits dated to late MIS 3 (c. 33 Kya) and contained well preserved palaeoenvironmental evidence (ostracods, foraminifera and pollen). This is demonstrative of the high palaeoenvironmental potential of the similar Chalky Silts and Gravels within the Project Boundary in GCZ 6.

7.7.4 Sampling of these deposits for palaeoenvironmental assessment was generally not possible during the GI monitoring due the deposit principally being encountered in cable percussion boreholes (BHP01, 02, 05, 06) which resulted in the recovery of disturbed and mixed sediment samples that were not suitable for geoarchaeological sampling. Two bulk sediment samples of approximately 0.2l were obtained from the top 0.60m of a 3.90m thick sequence of the underlying Chalky Silts and Gravels in BHP05. These are suitable for assessment, but their value is limited by being samples from only the top of a sequence and would not be dateable.

Gravels

7.7.5 In places the Chalky Silts and Gravels recorded within the Site Boundary in GCZ 6 are overlain by gravels, tentatively interpreted as belonging to the Pleistocene Pagham Raised Beach, suggested to date MIS 5e (130–115 Kya; Bates et al. 2010). The deposits have been little researched, but no archaeology can be attributed to these Gravels, or the Pagham Beach in the area.

7.7.6 The coarse sands and gravels recorded are indicative of a high energy environment. Any archaeology within such deposits would likely, therefore, be extensively reworked, possibly over large distances and/or from earlier deposits, which would limit significance. Similarly, such high energy marine gravels have low potential for palaeoenvironmental data. Finer-grained sediments within the Gravels would have greater potential to contain contemporary, less disturbed and more significant archaeology and palaeoenvironmental evidence. Although no such finer-grained deposits were noted in deposit records, their presence within the Site Boundary cannot be entirely excluded.

Gravelly Clays

7.7.7 In GI interventions within the Project Boundary, the Chalky Silts and Gravels and the Gravels possibly belonging to the Pagham Raised Beach are overlain by Gravelly Clays. The available information is insufficient to assess how the Gravelly Clays were deposited, and their age is uncertain. They may be Pleistocene Slope Deposits (Head). The archaeological potential of these deposits is unknown, although a late Upper Palaeolithic shouldered point from the south of the zone could be associated with their upper units or the overlying Clays (see below). The deposits are calcareous and may have palaeoenvironmental potential. As with the Chalky Silts and Gravels, opportunities for taking samples for palaeoenvironmental assessment from these deposits during GI monitoring was limited by the recovery techniques (mostly cable percussion boreholes), although all but two samples were obtained from the top and bottom of a calcareous unit in the Gravelly Silts in BHP05.

Clays

7.7.8 Clays overlying the Gravelly Clays have been interpreted as Holocene alluvial sediments formed in Langstone Harbour. Evidence indicates that these have archaeological potential.

7.7.9 A Late Upper Palaeolithic shouldered and obliquely truncated flint blade is recorded from the south of GCZ 6 (Wessex Archaeology 2023a), indicative of late Pleistocene activity. Although the specific context of this artefact is unknown, it is most likely to be broadly associated with these Clays or the top of the underlying Gravelly Clays. Holocene alluvial deposits further south in Langstone Harbour have been shown to reflect sea-level rise through the 9th–4th millennia BC (Allen and Gardner 2000). This indicates potential for terrestrial landscapes associated with prehistoric archaeology from the Mesolithic through to later Bronze Age periods.

7.7.10 Previous investigations have demonstrated that Holocene peats with significant palaeoenvironmental potential occur within Langstone Harbour. No organic deposits associated with the Clays have been identified within the Project Boundary, although localised occurrences cannot be ruled out; they may also contain microfossils (diatoms, ostracods and foraminifera) indictive of changing freshwater, brackish water and marine environments during the Holocene.

Alluvium

7.7.11 Localised occurrences of Holocene Alluvium of the Hermitage Stream and several minor parallel watercourses were identified within the Project Boundary in the north of GCZ 6. Data coverage is insufficient to assess their archaeological potential. The GDBA and GLC (Wessex Archaeology 2023a) identified localised peats within these deposits in GCZ 6 that have potential to contain palaeoenvironmental and dating evidence relatable to previous studies of the Holocene landscape history of Langstone Harbour (Allen and Garner 2000). This was in a BGS deposit record from a borehole located immediately beyond the Project Boundary.

Project impacts

7.7.12 Outline Project plans for development in these zones (Southern Water 2024) indicate that Project impacts will comprise the construction of the new Water Recycling Plant located to the south of Havant, tunnelled pipelines to the new Water Recycling Plant with open cut pipe trench sections at the plant and in the south of the Project Boundary, and construction compounds at the Water Recycling Plant and in areas to the north (**Figure 39**).

7.7.13 Given the depths of the Quaternary deposits infilling the basin (extending up to c. 20m below ground level), the impacts of the tunnelled pipelines will be dependent on their depth. If excavated through solid chalk bedrock, only tunnel entrances/shafts are likely to impact on Quaternary deposits, although it should be noted that in GI logs the Chalky Silts and Gravels are generally identified as chalk bedrock due to recovery techniques causing difficulties in identification. Tunnel entrances/shafts will likely impact on the Chalky Silts and Gravels, which have high geoarchaeological potential, and overlying Gravelly Clays and Clays assigned moderate potential.

7.7.14 Within the proposed location for the new Water Recycling Plant and open cut pipe trench, GI records from Phase 0 GI (Wessex Archaeology 2022) record Quaternary deposits, including Chalky Silts and Gravels which have a high geoarchaeological potential, beneath c. 7.5 to 16.5m of made ground (BHRP01, BHRP02, BEW0001 and BHW002). Only any piling associated with the new Water Recycling Plant is likely to impact on these deposits. In the area of proposed open cut pipe trench in the south of the Project Boundary, Phase 0 GI works (e.g. BHW005 and WSW04) recorded Quaternary deposits beneath 2.0–2.5m of Made Ground. The open cut pipeline may not therefore impact on the deposits.

7.7.15 Two proposed compounds located to the north of the new Water Recycling Plant are in areas where GI works (BHP02 and BP06) recorded Quaternary deposits beneath topsoil, which included Chalky Gravels and Gravelly Clays identified as having high and moderate geoarchaeological potential. Although the extent of impacts on these deposits will be dependent on construction works associated with the proposed compounds, at least the tops of these deposits are likely to be impacted on in these areas.

7.8 GCZ 7

Geoarchaeological resource

7.8.1 GI data coverage within the Project Boundary for this zone is sparse but indicates Quaternary deposits consisting of locally present shallow (c. 0.50m) sequences of Pleistocene Slope Deposits (Head) at the head of dry valleys, comprising soliflucted material derived from chalk bedrock. These may be late Pleistocene deposits relating to formation of these dry valleys at the end of the last Glacial period (MIS 2; 29 –11.7 Kya). Such deposits can preserve Palaeolithic archaeology and palaeoenvironmental records (vertebrate remains and molluscs). The potential of these specific deposits is unknown but given their limited thickness, and that fact that in monitoring they were observed to be bioturbated, their geoarchaeological potential may be limited (**Table 38**).

Table 38 Table Geoarchaeological potential of Quaternary deposits in GCZ 7

GCZ	Quaternary deposits	Geoarchaeological potential – Archaeology	Geoarchaeological potential – Palaeoenvironmental
7	Pleistocene Slope Deposits (Head)	?Low	?Low

Project impacts

7.8.2 Outline Project plans for development in these zones (Southern Water 2024) indicate that Project impacts will comprise a tunnelled pipeline and a compound location (**Figure 40**). This suggests that any Project impacts on Quaternary deposits in this zone will be localised and, assuming the pipeline will be tunnelled through chalk bedrock, only in the area of tunnel entrances/shafts and possibly at the compound location. A GI intervention (BH301) adjacent to the proposed compound locations identified 0.35m of Slope Deposits beneath topsoil. These Slope Deposits likely have low geoarchaeological potential.

7.9 GCZ 8

Geoarchaeological resource

7.9.1 GI monitoring and geoarchaeological review of GI data has demonstrated that Quaternary deposits within the Project Boundary in GCZ 8 occur within dry valleys, which dissect the chalk of Portsdown Hill. These valleys contain Slope Deposits, which likely comprise both Pleistocene Head and Holocene Colluvium. The GDBA and GLC (Wessex Archaeology 2023a) identified potential for in situ Mesolithic lithic scatters from within the Slope Deposits recorded during the GI works. The locations of these valleys are evident in the distribution of Head Deposits in BGS mapping and in LiDAR data (**Figures 20** and **23**).

7.9.2 GI interventions recorded sequences of Slope Deposits up to c. 3.0m thick within dry valleys. Monitoring demonstrated that these sequences exhibit stratigraphy indicating multiple periods of deposition and that the deposits are calcareous and could therefore preserve palaeoenvironmental evidence, specifically molluscs and vertebrate remains. Environmental records within such sequences have the potential to inform on landscape and environmental change and archaeological land-use practices (for example woodland clearance and agricultural activity). Investigations of such sequences requires cleaning and recording of sections in order to identify detailed stratigraphy and allow for recovery of stratified samples.

7.9.3 Additionally, potential solution features are evident in LiDAR located on highpoints on Portsdown Hill, particularly on the scarp slope of Portsdown Hill to south of the zone and above the valley of the Wallington River in the west of the zone (**Figures 20** and **23**). These

occur in areas adjacent to the Project Boundary. The presence of these visible solution features is indicative of locations within the Project Boundary with potential to contain non-visible solution features that are fully infilled by sediments and have no surface expression. One GI location (2F3501DS) was located on the edge of a possible solution feature and demonstrates that these can contain >2.0m of Quaternary deposits.

7.9.4 Finds of Lower/Middle Palaeolithic handaxes on Portsdown Hill were noted by the GDBA and GLC (Wessex Archaeology 2023a), which may be from solution features. Additionally, the GDBA and GLC identified Mesolithic lithic scatters from 'solution pipes' that were excavated to the south of the Project Boundary in GCZ 8 during the construction of the M27 (Wessex Archaeology 2023a). These archaeological finds highlight the potential for the deposits within solution features in the Project Boundary to preserve prehistoric archaeology dating from the Palaeolithic period onwards. Such archaeology could include in situ lithic scatters from preserved landsurfaces.

7.9.5 The geoarchaeological potential of the Quaternary deposits identified within the Project Boundary in GCZ 8 are summarised in **Table 39**.

Table 39 Geoarchaeological potential of Quaternary deposits in GCZ 8

GCZ	Quaternary deposits	Geoarchaeological potential – Archaeology	Geoarchaeological potential – Palaeoenvironmental
8	Pleistocene / Holocene sediments within solution features	Moderate	Moderate
	Pleistocene / Holocene Slope Deposits (Head / Colluvium)	Moderate	Moderate
	Stable surfaces within/beneath Slope Deposits	Moderate	Moderate

Project impacts

7.9.6 Outline Project plans for development in this zone (Southern Water 2024) indicate that Project impacts will comprise an open cut pipe trench and compound locations (**Figures 41–42**). The open cut pipe trench may impact on geoarchaeologically significant Slope Deposits where it crosses dry valleys. The pipe trench may also impact on solution features (both visible in the modern topography and fully infilled) containing geoarchaeologically significant deposits. **Figures 41–42** illustrate locations where these development proposals will impact deposits within Dry Valleys and areas that will be impacted where LiDAR data (**Figures 19** and **23**) indicates infilled solution features could occur.

7.10 GCZ 12

Geoarchaeological resource

7.10.1 The Project Boundary in GCZ 12 crosses the Wallington River. GI interventions were concentrated in the centre of this zone, within a dry valley located to the east of the Wallington River (**Figure 23**).

7.10.2 GI monitoring and review of GI identified Pleistocene fluvial deposits of the Wallington River, which are overlain by Pleistocene/Holocene Slope Deposits and, along the course of the current river, Holocene Alluvium.

7.10.3 The geoarchaeological works indicate that Pleistocene River Terrace Ddeposits in this zone are more complicated than has previously been recognised. The data suggest that there is a single low lying river terrace located above the current Holocene floodplain of the river, which potentially relates to a late Pleistocene diversion of the Wallington River into its current drainage pattern. The review suggests that prior to this the Wallington River followed a former course through what is now a dry valley. Pleistocene river terraces are mapped by the BGS along the axis of this dry valley (**Figure 23**), which may be earlier Pleistocene river terraces of the Wallington River dating to prior to its diversion.

7.10.4 The geoarchaeological potential of the Pleistocene terraces of the Wallington River in GCZ 12 is poorly understood and they were not extensively investigated by the GI works. The GDBA and GLC (Wessex Archaeology 2023a) identified two Palaeolithic artefacts from the area of the higher terraces of the Wallington River mapped by the BGS, which may be from these earlier, pre-diversion terraces and are indicative of their archaeological potential.

7.10.5 GI monitoring noted calcareous sandy silts within the basal fluvial gravelly clays, deposits associated with the low terrace of the Wallington River (2F3503SA). Such deposits have the potential to preserve palaeoenvironmental evidence which could include ostracods, foraminifera, molluscs and vertebrates. However, due to the drilling technique (cable percussion boreholes) these deposits were recovered as mixed deposits, and were not suitable for sampling for palaeoenvironmental assessment.

7.10.6 Pleistocene Head/Holocene Colluvium infilling the dry valley could bury in situ archaeological deposits. Similarly, they could contain reworked artefacts. The GI monitoring did not identify sediments within these Slope Deposits that had significant palaeoenvironmental potential.

7.10.7 Possible solution features have been identified in LiDAR data adjacent to the Project Boundary on the upper slopes of the Wallington Valley in the east of GCZ 12 (**Figure 23**). These areas were not investigated by the GI and there is potential for infilled solution features to be present within the Project Boundary in this area that could to contain Pleistocene and/or Holocene deposits containing prehistoric archaeology, including situ artefact scatters.

7.10.8 The Holocene Alluvium of the Wallington River was not investigated by GI works and its geoarchaeological potential is unknown.

7.10.9 The geoarchaeological potential of the Quaternary deposits identified within the Project Boundary in GCZ 12 are summarised in **Table 40**.

Table 40 Geoarchaeological potential of Quaternary deposits in GCZ 12

GCZ	Quaternary deposits	Archaeological potential of deposits	Palaeoenvironmental potential of deposits
12	Holocene Alluvium	Unknown	Low (minerogenic floodplain sediments) High (peat / palaeochannels)
	Pleistocene / Holocene sediments within solution features	Unknown	Moderate

	Pleistocene Head Deposits / Holocene Colluvium	Unknown	Moderate
	Stable surfaces within/beneath Pleistocene Head Deposits / Holocene Colluvium	Unknown	Moderate
	Pleistocene River Terrace Deposits (Post-Diversion)	Unknown	Moderate
	Pleistocene River Terrace Deposits (Pre-Diversion)	Moderate	Unknown

Project impacts

7.10.10 Outline Project plans for development in this zone (Southern Water 2024) indicate that Project impacts will comprise an open cut pipe trench, with a trenchless crossing of the Wallington River, and compound locations (**Figure 42**).

7.10.11 The trenchless crossing will likely only impact on Quaternary deposits at launch pits at the eastern and western ends, thus avoiding impacts on deposits within the Holocene floodplain. In the locations of these launch pits, which are also areas of proposed compounds, GI interventions recorded Pleistocene river terrace deposits (2F3502SA and 273503SA). These terrace deposits have Palaeolithic archaeological potential. Additionally, localised deposit with palaeoenvironmental potential were identified within these terrace deposits in the GI works (2F3503SA). The terrace deposits were present from beneath topsoil to depths of c. 4.0–5.0 m bgl and launch pits will likely impact through all of the Pleistocene sequences, whilst construction works for compounds will likely impact on at least the top of these deposits.

7.10.12 East of the Wallington River the open cut pipe trench will impact on areas where solution features with the potential to contain prehistoric arcaheology could occur. Areas within the Project Boundary within GCZ 12 where these are most likely to occur are illustrated in **Figure 42**.

7.10.13 West of the Wallington River, the open cut pipe trench and an adjacent compound will impact upon Slope Deposits within the dry valley. These deposits have been highlighted as having potential to contain in situ Palaeolithic and later prehistoric archaeology. The deposits were present in GI interventions from beneath topsoil to depths in their deepest areas of c. 5m bgl. Impacts from the pipe trench and compound are likely to principally be on the upper units of these sequences.

7.10.14 Further west, the open pipe trench will cross areas on the slopes of the dry valley where possible Pleistocene river terraces of the Wallington River occur. These have been identified as having Palaeolithic archaeological potential. The distribution and sediments of these terrace deposits is currently not clearly established, and they are likely overlain in places by Slope Deposits. However, they were recorded in GI interventions from beneath topsoil (e.g. 3W8559TP) and they likely will be impacted by the open pipe trench.

7.11 GCZ 13

Geoarchaeological resource

7.11.1 Six GI interventions were located within the west of GCZ 13 (**Figure 23**). These were shallow interventions (<1.20m) but, in addition to Pleistocene and/or Holocene Slope Deposits, two identified the top of Pleistocene River terraces. One (3W8528HP) likely

belongs to a terrace of the River Meon, which is located to the west in GCZ 15. The other, 3W8526HP, may relate to the previously unrecognised terraces of the Wallington River that follow the course of a dry valley in GCZ 12 (see above). This suggests that boundaries of GCZs 12, 13 and 14 should be revised (**Figure 42**).

Project impacts

7.11.2 The revised boundaries of GCZ 13 place this zone outside of the Project Boundary in areas where no development impacts are planned (**Figure 42**). No Quaternary deposits are mapped in these areas by the BGS and it is unlikely that significant Quaternary deposits will be present.

7.12 GCZ 14

Geoarchaeological resource

7.12.1 GCZ 14 is the southern continuation of the interfluve between the valleys of the Wallington River and the river Meon, in an area where the underlying bedrock is chalk. Although GI works were carried out in this zone, it sits outside of the Project Boundary (**Figure 23**). Review of LiDAR data in GDBA and GLC identified possible solution features in this zone, but none were investigated by the GI work.

7.12.2 No GI interventions were monitored in this zone but c. 1.0m deep sequences of Slope Deposits were identified in the geoarchaeological review of GI data, which may be Pleistocene Head/and or Holocene colluvium. The geoarchaeological potential of these deposits is unknown. The deposits were calcareous so may have potential to preserve molluscs and vertebrates.

7.12.3 The geoarchaeological potential of the Quaternary deposits identified within the Project Boundary in GCZ 14 is summarised in **Table 41**.

Table 41 Geoarchaeological potential of Quaternary deposits in GCZ 14

GCZ	Quaternary deposits	Geoarchaeological potential – Archaeology	Geoarchaeological potential – Palaeoenvironmental
14	Pleistocene / Holocene Slope Deposits (Head / Colluvium)	Unknown	?Moderate
	Stable surfaces within/beneath Slope Deposits	Unknown	Moderate

Project impacts

7.12.4 No development impacts are proposed within GCZ 14 (**Figure 42**).

7.13 GCZ 15

Geoarchaeological resource

7.13.1 GI monitoring and geoarchaeological review of GI data identified an extensive sequence of Pleistocene river terraces of the River Meon in this zone, with up to seven different terraces of different dates within the Pleistocene present possibility present within the Project Boundary, of which at least four (Terraces 1, 2, 4 and 6/7) were identified by the monitoring and GI data review. GI interventions were heavily focussed on the north of the zone, where terraces 6 and 7 are mapped by the BGS (**Figure 27**).

7.13.2 These terraces of the River Meon have not been previously studied and little information is available as to their geoarchaeological potential. However, the presence of a large number of terraces suggests that they will have geoarchaeological potential and may contain archaeology dating to multiple periods of the Lower and Middle Palaeolithic. Whilst the GI monitoring has enabled the mapping of the Pleistocene river terrace deposits in this zone and within the Project Boundary to be considerably enhanced, the geoarchaeological potential of these deposits remains unknown, having been mostly encountered Gi monitoring in a relatively small number of boreholes and a larger number of hand-dug test pits (<1.20m) that only reached the top of the terrace deposits.

7.13.3 The River Meon flows across the Hampshire Basin and forms part of the Solent River system. Only very occasional localised organic sediments occur within river terraces in the Hampshire Basin and deposits tend to be unfossiliferous, reflecting a lack of calcareous deposits due to the dominant underlying bedrock being Palaeogene clays, silts and sands. This is reflected in the GI monitoring, which did not identify deposits with palaeoenvironmental potential.

7.13.4 Slope Deposits were identified overlying some River Terrace Deposits and bedrock slopes. These were mostly recorded in GI interventions that were not geoarchaeologically monitored and their potential to contain archaeology is unknown. They may include both Pleistocene Head Deposits and Holocene Colluvium. The deposits recorded are decalcified and their palaeoenvironmental potential is likely to be low.

7.13.5 Only one GI intervention encountered Holocene Alluvium, which were minerogenic sediments with low geoarchaeological potential. The GDBA and GLC (Wessex Archaeology 2023a) highlighted depressions located to the south-west of the Project Boundary visible in LiDAR data (**Figure 27**). These are indicative of paleochannels within the Holocene Alluvium, which could have geoarchaeological potential.

7.13.6 The geoarchaeological potential of the Quaternary deposits identified within the Project Boundary in GCZ 15 is summarised in **Table 42**.

Table 42 Geoarchaeological potential of Quaternary deposits in GCZ 15

GCZ	Quaternary deposits	Geoarchaeological potential – Archaeology	Geoarchaeological potential – Palaeoenvironmental
15	Holocene Alluvium	Unknown	Low (minerogenic floodplain sediments) High (peat / palaeochannels)
	Pleistocene / Holocene Slope Deposits (Head / Colluvium)	Unknown	Low
	Stable surfaces within/beneath Slope Deposits	Unknown	Moderate
	Pleistocene River Terrace Deposits (Terraces 1, 2, 4 and 6/7)	Unknown	Low (North) ?Moderate (South)

Project impacts

7.13.7 Outline Project plans for development in this zone (Southern Water 2024) indicates that Project impacts will comprise an open cut pipe trench, with a trenchless crossing of the River Meon, and compound locations (**Figure 43**).

7.13.8 In areas east of the River Meon and east of a proposed compound associated with the eastern end of the trenchless crossing of the Meon, GI data indicates that the open pipe trench and a further proposed compound will impact on Slope Deposits with unknown archaeological potential but likely low palaeoenvironmental potential (e.g. 3W8528HP–3W8532HP). However, given these interventions were shallow (1.2m), these Slope Deposits could overlie river terrace deposits that could also be impacted.

7.13.9 Deposits in areas where entry points and compounds for the trenchless crossing east and west of the River of the Meon are proposed, comprise up to 3.0m of Pleistocene deposits belonging to Terrace 2. These River Terrace Deposits have potential to contain Palaeolithic archaeology but have low paleoenvironmental potential.

7.13.10 West of the River Meon the open cut pipe trench will cross areas where terraces of the River Meon are likely to be present, and which have Palaeolithic archaeological potential, but which were not investigated by GI interventions.

7.13.11 Further north within the Project Boundary GI interventions identified terrace deposits mapped as Terrace 6 and 7 by the BGS. These have Palaeolithic archaeological potential and occur beneath topsoil. They are thus likely to be impacted on by the cut pipe trench and to some extent by proposed compounds that are located in this area. In locations that were geoarchaeologically monitored, the terrace deposits had low palaeoenvironmental potential, but a GI log from an unmonitored intervention (3G4038DS) recorded organic fragments within a sandy clayey gravel of River Terrace 6/7, and may indicate the presence within the Project Boundary of units within these terrace deposits that have greater palaeoenvironmental potential.

7.14 GCZ 16

7.14.1 The GBDA and GLC (Wessex Archaeology 2023a) concluded that geoarchaeologically significant deposits were unlikely to be present in this zone, which is the interfluve that separates the Meon Valley (GCZ 15) from a dry valley in GCZ 17. Geoarchaeological review of logs from two GI interventions supports this conclusion. It this therefore unlikely that proposed Project plans (open cut pipe trench) will impact on geoarchaeologically significant deposits

7.15 GCZ 17b

Geoarchaeological resource

7.15.1 The Project Boundary within GCZ 17b crosses the head of a dry valley, which to the west of the zone develops into an east bank tributary of the River Hamble. Only two GI interventions were in this zone. One identified >0.90m of Slope Deposits (3H4514HP), with upper and lower stratigraphic units, which may reflect Pleistocene Head, overlain by Holocene Colluvium. These deposits were beneath topsoil. The potential of these deposits to contain archaeology is unknown, but they could contain evidence, including in situ prehistoric archaeology from buried land surfaces. The Slope Deposits were decalcified and had low palaeoenvironmental potential.

7.15.2 A possible channel identified in LiDAR data and that could contain Holocene Alluvium is crossed by the Project Boundary in this zone (**Figure 29**). This was not investigated by the GI works.

7.15.3 The geoarchaeological potential of the Quaternary deposits within the Project Boundary in this zone, as characterised through the GDBA and GLC (Wessex Archaeology 2023a) and the GI monitoring, is summarised in **Table 43**.

Table 43 Geoarchaeological potential of Quaternary deposits in GCZ 17b

GCZ	Quaternary deposits	Geoarchaeological potential – Archaeology	Geoarchaeological potential – Palaeoenvironmental
17b	Holocene Alluvium	Unknown	Low (minerogenic floodplain sediments) High (peat / palaeochannels)
	Pleistocene / Holocene Slope Deposits (Head / Colluvium)	Unknown	Low
	Stable surfaces within/beneath Slope Deposits	Unknown	Moderate

Project impacts

7.15.4 Outline Project plans for development in this zone (Southern Water 2024) suggest that impacts will be via an open cut pipeline trench (**Figure 44**). This will likely impact on the Pleistocene/Holocene Slope Deposits of unknown archaeological potential identified during monitoring and any Holocene Alluvium associated with the possible channel identified in LiDAR data.

7.16 GCZ 18

7.16.1 The GDBA and GLC (Wessex Archaeology 2023a) concluded that it was unlikely that geoarchaeologically significant Quaternary deposits would be present in this zone, which is the interfluve between tributary valleys of the River Hamble.

7.16.2 Geoarchaeological review of GI data confirms that this is the case, with Quaternary deposits being largely absent and when occasionally present confined to shallow (c. 0.50m thick), localised occurrences of Slope Deposits. These may be Pleistocene Head and/or Holocene Colluvium.

7.16.3 The evidence indicates that proposed project impacts in this zone (open cut pipeline trench and compounds) are unlikely to impact on any geoarchaeologically significant deposits.

7.17 GCZ 19

Geoarchaeological resource

7.17.1 The Project Boundary in GCZ 19 crosses the head of a valley containing Kitnocks Gully, an east bank tributary of the River Hamble.

7.17.2 The GDBA and GLC (Wessex Archaeology 2023a) concluded that the valley may contain Slope Deposits and Holocene Alluvium. Although no interventions in this zone were selected for monitoring, geoarchaeological review of GI data indicated that the valley does contain significant sequences of Slope Deposits, with sequences that were >3.0m thick recorded, beneath c. 2.0–3.0 m of made ground. These may all be Holocene Colluvium or could also include Pleistocene Head. The Slope Deposits are geoarchaeologically significant as the GDBA and GLC identified a large Mesolithic lithic assemblage from Shedfield, which is located south of GCZ 13 at the head of a side valley leading to Kitnocks Gully (Wessex Archaeology 2023a). Such archaeology could occur within, or be buried by Holocene Slope Deposits. The Slope Deposits recorded in the GI work are unlikely to be calcareous and may have limited palaeoenvironmental potential.

7.17.3 Locations within the valley of Kitnocks Gully and within the Site Boundary where Alluvium is recorded were not investigated by the GI works. GI interventions located to the north of the valley containing Kitnocks Gully suggest that no geoarchaeologically significant deposits are present within the Project Boundary.

7.17.4 The geoarchaeological potential of the Quaternary deposits within the Project Boundary in GCZ 19 is summarised in **Table 44**.

Table 44 Geoarchaeological potential of Quaternary deposits in GCZ 19

GCZ	Quaternary deposits	Geoarchaeological potential – Archaeology	Geoarchaeological potential – Palaeoenvironmental
19	Holocene Alluvium	Unknown	Low (minerogenic floodplain sediments) High (peat / palaeochannels)
	Pleistocene / Holocene Slope Deposits (Head / Colluvium)	High	Low
	Stable surfaces within/beneath Slope Deposits	?High	Moderate

Project impacts

7.17.5 Outline Project plans for development in this zone (Southern Water 2024) suggest that impacts will be via an open cut pipeline trench (**Figure 44**). Two interventions in Kitnocks Gully identified Slope Deposits with archaeological potential that were sealed beneath c. 2.0–3.0m of made ground. This made ground will likely limit impacts on these deposits in these areas. However, it is unclear if these two interventions represent typical depths of made ground across this valley and the Project area. Consequently, the extent to which they will be impacted on across this part of the Project Boundary by the open cut pipe trench is uncertain. The trench may impact on Holocene Alluvium of unknown geoarchaeological potential mapped by the BGS.

7.17.6 GI data indicates that in most areas of this zone that are within the Project Boundary, but outside of Kitnocks Gully, no geoarchaeologically significant deposits are present. A possible exception is a proposed compound location at the western limit of the GCZ, which is on the edge of a side valley to Kitnocks Gully, within which the BGS maps Head Deposits (**Figure 45**).

7.18 GCZ 20

7.18.1 GCZ 20 crosses the interfluve between the two spur valleys of Kitnocks Gully and the valley of the River Hamble. The GDBA and GLC (Wessex Archaeology 2023a) concluded that it was unlikely that Quaternary deposits with significant geoarchaeological potential would be present. Geoarchaeological review of GI data from this zone confirmed the absence of Quaternary deposits within the Project Boundary. Therefore, proposed project impacts in this zone (open cut pipeline trench and compounds) are unlikely to impact on any geoarchaeologically significant deposits.

7.19 GCZ 21

Geoarchaeological resource

7.19.1 Within GCZ 21 the Project Boundary crosses the valley of the River Hamble, where laterally extensively Pleistocene River Terrace Deposits, which will include multiple terraces, are mapped by the BGS, along with Pleistocene Head Deposits and Holocene Alluvium.

7.19.2 Due to the lack of BGS and GI deposit records, the number and distribution of terrace deposits is currently poorly understood. Only two GI interventions investigated these terraces, which likely belong to two of the lower, more recent Pleistocene terraces.

7.19.3 The geoarchaeological potential of the Hamble terraces located within the Project Boundary is unknown. No known Palaeolithic archaeology associated with these terraces has been identified, but potential is likely given the extensive amount of Palaeolithic artefacts from the River Test, of which the Hamble is a tributary. Based on the underlying Palaeogene bedrock and broadly equivalent deposits investigated in the Test Valley, palaeoenvironmental potential is most likely to be low, but possible isolated occurrences of organic deposits could occur. Two GI interventions monitored in this zone (2K5500SR and 2K5501SR), identified fluvial deposits that may include sands and gravel channel fills and floodplain deposits, none of which has significant palaeoenvironmental potential.

7.19.4 Slope Deposits, which may be Pleistocene Head or Holocene colluvium, were identified in a single GI intervention (3J5024HP). The archaeological potential of these is unknown, but the palaeoenvironmental potential was low.

7.19.5 Holocene Alluvium was not present in any GI locations. The GDBA and GLC (Wessex Archaeology 2023a) noted residual finds of Mesolithic lithics material from excavations at the Bishop's Place in Bishop's Walton, upstream of GCZ 21, which may suggest geoarchaeological potential for Mesolithic activity associated with alluvial and/or Slope Deposits that are located on the edge of the Holocene floodplain.

7.19.6 The geoarchaeological potential of the Quaternary deposits located within the Project Boundary in GCZ 21 is summarised in **Table 45**.

Table 45 Geoarchaeological potential of Quaternary deposits in GCZ 21

GCZ	Quaternary deposits	Geoarchaeological potential – Archaeology	Geoarchaeological potential – Palaeoenvironmental
21	Holocene Alluvium	Unknown	Low (minerogenic floodplain sediments) High (peat / palaeochannels)
	Pleistocene / Holocene Slope Deposits (Head / Colluvium)	Unknown	Low
	Stable surfaces within/beneath Slope Deposits	Unknown	Moderate
	Pleistocene River Terrace Deposits	Unknown	?Low

Project impacts

7.19.7 Outline Project plans for development in this zone (Southern Water 2024) indicate that Project impacts will comprise an open cut pipe trench, with a trenchless crossing of the River Hamble, and compound locations (**Figure 45**).

7.19.8 South of the River Hamble, in the area of the southern entry to the trenchless crossing and an associated compound, River Terrace Deposits and Slope Deposits beneath topsoil were identified. These may have archaeological potential and will likely be impacted by the trenchless crossing entry and, dependent on construction impacts, the proposed compound.

7.19.9 North of the River Hamble the open cut pipe trench will cross, and likely impact on, Pleistocene terrace deposits. These likely have Palaeolithic archaeological potential. However, the extent of these impacts is uncertain due to a lack information on the distribution and lithostratigraphy of the terrace deposits.

7.19.10 The trenchless crossing of the Hamble will likely limit impacts on Holocene alluvial deposits. However, such deposits with archaeological potential may be impacted on by the northern trenchless crossing entry and associated proposed compound, which are located on the edge of Holocene Alluvium, as mapped by the BGS (**Figure 45**). This is a location on the edge of the Holocene floodplain that has been highlighted as having potential to preserve evidence of prehistoric activity (see above).

7.20 GCZ 22a

7.20.1 In this zone the Project Boundary crosses the valley of small tributary of the River Hamble, where the BGS map Holocene Alluvium. One GI intervention (3K5511DS) was located in the centre of where this Alluvium is recorded. Geoarchaeological monitoring demonstrated an absence of Quaternary deposits, although these may have been removed by previous impacts as 1.60m of made ground above bedrock was recorded.

7.20.2 Although only limited evidence is available, it is likely that any alluvial deposits within the Project Boundary in this zone are ephemeral and have low geoarchaeological potential. Consequently, it is unlikely that Project development proposals in this zone (open cut pipe trench) will impact on geoarchaeologically significant deposits.

7.21 GCZ 23

7.21.1 The Project Boundary in GCZ 23 crosses a wide interfluve that separates the valley of the River Hamble from the Bow Lake Stream, an Itchen tributary. Review of available data in the GDBA and GLC indicated that it is unlikely that Quaternary deposits with significant geoarchaeological potential are present in this zone (Wessex Archaeology 2023a).

7.21.2 GI interventions were carried out across GCZ 23. No significant Quaternary deposits were identified, with the only deposits recorded being shallow (<0.70m thick) sequences of alluvial silts and clays belonging to minor Holocene watercourses. These have low geoarchaeological potential.

7.21.3 Sandy clays in the tops of geological sequences were frequently identified as Head Deposits in GI logs. Geoarchaeological review of these logs has demonstrated that these are in fact likely to be bedrock sediments belonging to remnant deposits of the Lambeth Group.

7.21.4 Based on the results of the geoarchaeological monitoring of GI works, it is unlikely that Project development proposals in this zone (open cut pipe trench and compounds) will impact on geoarchaeologically significant deposits.

7.22 GCZ 24

Geoarchaeological resource

7.22.1 The Project Boundary within GCZ 24 crosses the valley of the Bow Lake Stream, a tributary of the River Itchen. Geoarchaeological monitoring has demonstrated that Quaternary deposits present comprise likely late Pleistocene to Holocene colluvial Slope Deposits sides and Holocene alluvium. The GDBA and GLC highlighted archaeological potential associated with these deposits, indicated by concentrations of Mesolithic lithic artefacts from the alluvial floodplain of the Bow Lake Stream to from a location to the south-west of the Project Boundary Stoke Common, Bishopstoke (Wessex Archaeology 2023a).

7.22.2 The geoarchaeological monitoring demonstrated that the Slope Deposits likely have low palaeoenvironmental potential. Similarly, although detrital organic material was observed, the Holocene Alluvium in GI interventions were minerogenic floodplain deposits with low palaeoenvironmental potential. However, LiDAR data indicates the presence of palaeochannels on the southern edge of the alluvial corridor (**Figure 33**), which could contain deposits with greater potential. The locations of these possible palaeochannels were not investigated by the GI works.

7.22.3 The GI inventions indicate that to the east of GI intervention 2L6001TP (**Figure 33**), the potential for geoarchaeologically significant Quaternary deposits to occur within the Project Boundary is limited, although Holocene Alluvium in two small tributaries of the Bow Lake Stream may be encountered.

7.22.4 The geoarchaeological potential of the Quaternary deposits within the Project Boundary in GCZ 24 is summarised in **Table 46**.

Table 46 Geoarchaeological potential of Quaternary deposits in GCZ 24

GCZ	Quaternary deposits	Geoarchaeological potential – Archaeology	Geoarchaeological potential – Palaeoenvironmental
24	Holocene Alluvium	?Moderate	Low (minerogenic floodplain sediments) High (peat / palaeochannels)
	Late Pleistocene / Holocene Colluvium	?Moderate	Low
	Stable surfaces within/beneath Slope Deposits	Unknown	Moderate

Project impacts

7.22.5 Outline Project plans for development in this zone (Southern Water 2024) indicate that Project impacts will comprise an open cut pipe trench, trenchless crossings of the B3354 and Bow Lake Stream, and construction compound locations (**Figure 46**).

7.22.6 Although it may impact on Holocene Alluvium belonging to two small tributaries of the Bow Lake Stream, the open cut pipe trench located to the east of GI intervention 2L6001TP is unlikely to impact on geoarchaeologically significant deposits,.

7.22.7 West of GI intervention 2L6001TP, and continuing eastwards towards the trenchless crossing of the B3354, Slope Deposits have been recorded beneath topsoil. These sediments may have potential to contain archaeological remains, which could include buried prehistoric lithic scatters. These will be impacted on by the open cut pipe trench and, depending on construction requirements, a proposed compound.

7.22.8 The trenchless crossings of the B3354 and Bow Lake Stream and intervening open cut pipe trench traverse the floodplain of the Bow Lake Stream. Holocene Alluvium was identified in GI interventions beneath topsoil in these areas. The alluvial sediments were minerogenic and had low paleoenvironmental potential. However, detrital organic material was observed in the Alluvium in GI interventions, which may be indicative of the presence of peats in the local area.

7.22.9 The trenchless crossings and associated compounds are located on the southern and northern edge of the alluvial floodplain, which are locations where archaeological activity, such as that represented by the concentration of Mesolithic artefacts from Stoke Common, Bishopstoke (see above) could be expected to occur. These alluvial sediments will likely be impacted by the open cut pipe trench, entry points for the trenchless crossings and, depending on construction requirements, associated proposed compounds. The trenchless crossing of the B3354 is adjacent to a possible palaeochannel mapped identified in LiDAR (**Figure 47**), which may be impacted on by entry point for the trenchless crossing.

7.23 GCZ 25

7.23.1 The Project Boundary in this zone crosses areas likely to principally comprise bedrock overlain by topsoil, with some shallow sequences of Slope Deposits. One GI intervention was located in this zone which recorded 0.45m of Holocene Colluvium with low geoarchaeological potential. The proposed project impacts in this zone (open cut pipeline trench) are unlikely to impact on any geoarchaeologically significant deposits.

7.24 GCZ 26

Geoarchaeological resource

7.24.1 The geoarchaeological monitoring and review of GI data has defined a range of Pleistocene and Holocene deposits located within the Project Boundary in GCZ 26 that relate to the River Itchen and its tributary, the Otter Bourne. These comprise two river terraces (Terraces 3 and 1), late Pleistocene fluvial sands and gravels located beneath the Holocene floodplain, Slope Deposits and Holocene Alluvium.

Terrace 3

7.24.2 Terrace 3 deposits have been identified in the east of the Project Boundary, in a single shallow intervention (<1.20m) which only reached the top of the terrace. These deposits have demonstrated potential to contain significant Palaeolithic archaeology. The GBDA and GLC (Wessex Archaeology 2023a) highlighted that a historic gravel pit quarrying the same Terrace 3 deposits and located to the north of the Project at Colden Common produced at least 65 handaxes and a Middle Palaeolithic Levallois flake. This is the most significant Lower to Middle Palaeolithic archaeological assemblage currently know from the terraces of the River Itchen. The age of the terrace is uncertain, but the presence of Middle Palaeolithic Levallois material in a terrace at the elevation of Terrace 3 may indicate an early Middle Palaeolithic date (MIS 7–6; 240–160 Kya).

Terrace 1

7.24.3 Lower and younger Pleistocene terraces of the Itchen were identified in GI data in areas within the Project Boundary both to the west and east of the River Itchen. These are currently all correlated with the same terrace, Terrace 1, but it is possible that a separate terrace, later in date than Terrace 3 and predating Terrace 1 may also be present. These Terrace 1 deposits have not been much investigated for Palaeolithic archaeology, but potential has been demonstrated with a Palaeolithic handaxe and two Middle Palaeolithic Levallois flakes recorded from these deposits in a gravel pit at Highbridge, locate to the south of the Project Boundary (Wessex Archaeology 2023a).

7.24.4 The palaeoenvironmental potential of the Itchen terraces is poorly understood. No deposits with significant potential were identified in the monitoring. However, it is possible that deposits with greater potential are present. In the south, where the GI interventions were located, river terraces cross Palaeogene bedrock. In such circumstances elsewhere in the wider Solent catchment palaeoenvironmental potential is generally low. However, in the north of the Project boundary, towards Otterbourne Water Supply Works, the bedrock is chalk and, if suitable finer-grain sediments were present, these could preserve material including vertebrates and molluscs.

Sands and Gravels

7.24.5 Fluvial sands and gravels were identified in two interventions (BH502 and BH505) beneath the Holocene floodplain of the River Itchen. These are likely late Pleistocene fluvial deposits, which post-date the down cutting of Terrace 1 and reflect the earliest deposits of the current Itchen floodplain. They are characteristic of high energy cold stage fluvial sediments deposited by a braided river. These high energy deposits, likely associated with the end of the last Glacial Period (MIS 2; 29–11.7 Kya) likely have low potential to contain significant geoarchaeological evidence, both for archaeology and palaeoenvironmental evidence.

Slope Deposits (Head)

7.24.6 The River Terrace Deposits recorded in GI data are overlain by slightly gravelly sandy clays containing sub-angular to sub-rounded flint clasts. These are similar to Pleistocene Head-Brickearth deposits which overlie the terraces of the River Test further to the west in the Hampshire Basin.

7.24.7 Geoarchaeological monitoring suggested that these were principally deposited through slope processes, and include the cryoturbated and soliflucted top of the terrace deposits and colluvial deposits, potentially reworking wind-blown material. The archaeological potential these deposits in the Itchen Valley is uncertain, but similar deposits in the Test Valley can contain significant Palaeolithic archaeology (see **section 2.5**). The palaeoenvironmental potential of these deposits observed in GI monitoring was low.

Alluvium

7.24.8 The Holocene Alluvium was minimally investigated by GI works, but a possible fill of a palaeochannel of the river Itchen was identified in a geoarchaeological review of GI logs (BH507C and BH507D), located to the south-east of the current active floodplain. Palaeochannels can be key contexts for geoarchaeological evidence, in particular palaeoenvironmental datasets.

7.24.9 BGS deposit records demonstrate the presence of peats within the Holocene alluvial sequences to the south of the Project Boundary (e.g. SE42SE34). Whilst the small number of GI interventions that investigated the alluvium did not identify peats, peats could be

present within the Project Boundary. Such deposits are geoarchaeologically significant and can preserve a range of palaeoenvironmental datasets, including plant macro fossils, pollen and invertebrate remains, and can also be associated with organic archaeological remains.

7.24.10 BGS deposit records from north of the Project Boundary record tufa in the Holocene alluvium (e.g. SU2SE74). Tufa has high geoarchaeological potential and can preserve vertebrate and molluscan remains. Tufa could only occur in the north of the Project boundary in GCZ 26, towards Otterbourne Water Supply Works, where chalk bedrock is present.

7.24.11 The GDBA and GLC highlights the potential for prehistoric archaeology associated with Holocene Alluvial sequences found within the Project Boundary in GCZ 26 (Wessex Archaeology 2023a), with evidence in the centre of the floodplain at Rosemary Leet located to the north of the Project Boundary.

7.24.12 The geoarchaeological potential of the Quaternary deposits within the Project Boundary in GCZ 26 is summarised in **Table 47**.

Table 47 Geoarchaeological potential of Quaternary deposits in GCZ 26

GCZ	Quaternary deposits	Geoarchaeological potential – Archaeology	Geoarchaeological potential – Palaeoenvironmental
26	Holocene Alluvium	?Moderate	Low (minerogenic floodplain sediments) High (peat / palaeochannels)
	Pleistocene Slope Deposits (Head)	?Moderate	Low
	Stable surfaces within/beneath Slope Deposits (Head)	Unknown	Low
	Late Pleistocene Sands and Gravels	Low	Low
	Pleistocene River Terrace 1	Moderate	?Moderate – North ?Low - South
	Pleistocene River Terrace 3	High	Unknown

Project impacts

7.24.13 Outline Project plans for development in this zone (Southern Water 2024) indicate that Project impacts will comprise an open cut pipe trench, trenchless crossings of the River Itchen and the Otter Bourne, and compound locations (**Figure 47**).

7.24.14 At the eastern end of the Project Boundary the open cut pipeline trench crosses, and will impact, Terrace 3 deposits of the Itchen. These have been highlighted as having high potential to contain Lower to Middle Palaeolithic archaeology. Further west, towards the eastern entry point of the trenchless crossing of the Itchen, the open pipe trench will impact on Terrace 1, identified as having moderate potential for Middle Palaeolithic archaeology.

7.24.15 The trenchless crossing of the Itchen traverses deposits of Terrace 1, Late Pleistocene Sands and Gravels and the Holocene Alluvium (the latter including the possible palaeochannel identified in BH507C and BH507D). If installed through bedrock, the trenchless crossing will likely only impact on these deposits at entry points and, dependent

on construction requirements, proposed associated compounds. The entry points and compounds are located in areas where they would impact on Terrace 1 deposits.

7.24.16 West of the Itchen, from the western entry point of the trenchless crossing of the Itchen, and north towards the Otter Bourne, an open cut pipe trench will impact on Slope and Terrace 1 Deposits with moderate archaeological potential. In places, particularly northwards towards the Otter Bourne, Quaternary deposits may be absent; however, data coverage is insufficient to establish specific locations where this is the case.

7.24.17 The trenchless crossing of the Otter Bourne to Otterbourne Water Supply Works traverses Terrace 1 (which may include confluent Otter Bourne Itchen deposits) and Holocene Alluvium of the Otterbourne. Should the trenchless crossing be installed through bedrock, Project impacts are likely to be restricted to trenchless crossing entry points and, depending on construction requirements, proposed compounds. These are in locations which will impact on Terrace 1 sediments, which have been determined to have moderate potential for Palaeolithic archaeology, and which may also have moderate palaeoenvironmental potential.

8 CONCLUSION AND RECOMMENDATIONS

8.1 Conclusions

8.1.1 A program of geoarchaeological monitoring of selected Ground Investigation (GI) works (GI Phase 1, Phase 2 and Phases 3a–c) relating to the Hampshire Water Transfer and Water Recycling Project was carried out. The purpose of this monitoring was to mitigate against impacts on, and to characterise, any archaeological or geoarchaeological deposits present.

8.1.2 The monitoring successfully characterised the Quaternary deposits present at selected locations and identified deposits with geoarchaeological potential. This potential includes for significant archaeological remains (artefacts, archaeological layers etc), as well as palaeoenvironmental remains reflective of past human activity, landscapes and environments. No archaeology was identified during the monitoring. Due to the methods applied and scope of the GI works, opportunities for sampling geoarchaeological deposits with palaeoenvironmental potential during monitoring was limited, but a small number of samples suitable for palaeoenvironmental assessment were obtained.

8.1.3 The results of the monitoring have been combined with data presented in a prior Geoarchaeological Desk-Based Assessment (GDBA) and Geoarchaeological Landscape Characterisation (GLC), which divided the Project's EIA Scoping Area into 28 Geoarchaeological Character Zones (GCZs) based on the Quaternary landscape features and deposits present (Wessex Archaeology 2023a). The combined datasets have been reviewed in relation to outline Project plans for development within the Project Boundary (Southern Water 2024) to provide an assessment of the Quaternary geoarchaeological resource that is likely to be impacted on by the Project.

8.1.4 The review of geoarchaeological potential and Project impacts has established that the Project is likely to impact on Quaternary geological deposits with significant geoarchaeological potential within defined areas of specific GCZs. Areas containing deposits with the greatest geoarchaeological potential and which are likely to be impacted on by the Project are:

- GCZs 5b-c – Pleistocene Raised Beach Deposits, overlain by Pleistocene Head. The Raised Beach Deposits are correlated with the Norton Beach, dated to late MIS 7 to

MIS 6 (220–170 Kya; Bates et al. 2010). This is within the early Middle Palaeolithic, a key period for early human activity. The Raised Beach Deposits and Head Deposits have the potential to contain significant Palaeolithic archaeology, which could include in situ lithic scatters. The Raised Beach Deposits have high potential to contain significant palaeoenvironmental evidence (ostracods, foraminifera and pollen), whilst the Head Deposits have moderate potential. Tunnel entrances/shafts and compounds associated with a tunnelled pipeline will likely impact on these deposits.

- GCZ 6 – Quaternary deposits which are within a basin formed in the chalk bedrock. Three sets of deposits with geoarchaeological potential have been highlighted; Chalky Silts and Gravels, which are likely Pleistocene freshwater sediments and which may date to MIS 3 (57 –29 Kya) and/or MIS 6 (191–130 Kya), overlying likely Pleistocene Gravelly Clays, whose mode of deposition is uncertain and likely Holocene alluvial Clays formed in Langstone Harbour. The Chalky Silts and Gravels and Gravelly Clays have high and moderate potential to contain significant palaeoenvironmental datasets and unknown archaeological potential, whilst the Clays have generally low palaeoenvironmental but moderate archaeological potential. The Project is most likely to impact on these deposits at tunnel entrances/shafts associated with tunnelled pipeline. Construction of the new Water Recycling Plant could also locally impact on these deposits. Impacts at proposed compound locations in the north of the GCZ will be dependent on compound construction requirements. If construction is limited to topsoil stripping, compounds are unlikely to impact on geoarchaeologically significant deposits.
- GCZ 8 – Dry valleys and solution features formed with the chalk bedrock on Portsdown Hill, highlighted as localised capture points for Quaternary sediments. The latter occur principally in the west of the zone where LiDAR data provides evidence of active chalk dissolution. Deposits within both the dry valleys and solution features can preserve significant prehistoric archaeology, including in situ lithic scatters on buried landsurfaces, and palaeoenvironmental evidence. Palaeolithic handaxes were previously recorded from Portsdown Hill which may be from similar contexts, whilst significant Mesolithic lithic assemblages are known from similar capture points and deposits in the area. Project development proposals in this zone (an open cut pipe trench and compound locations) will impact on these landscape features and contained deposits.
- GCZ 12 – Pleistocene river terraces, a previously unrecognised likely former Pleistocene course of the Wallington River and solution features. The potential former of the Wallington River is located within what is now a dry valley that has subsequently been infilled with Pleistocene and/or Holocene Slope Deposits. Both the Pleistocene River terrace Deposits and Pleistocene/Holocene Slope Deposits have potential for significant archaeology dating from the Palaeolithic period onwards. They may also locally include units with palaeoenvironmental potential. In the west of the zone the Project Boundary crosses the continuation of areas of chalk bedrock on the western slopes of Portsdown Hill, with potential for solution features that can contain geoarchaeologically significant deposits. These landscape features and deposits will be impacted on by a proposed open cut pipe trench and trenchless crossing entries across the floodplain of the Wallington River. The Project Boundary crosses Holocene alluvial deposits of the Wallingford River located in this floodplain, but the trenchless crossing is likely to prevent impacts.
- GCZ 15 – Up to seven terraces of the River Meon, in places overlain by Pleistocene and/or Holocene Slope Deposits. The age and geoarchaeological potential of these terraces is poorly understood, but the large number of terraces indicates high potential for Palaeolithic archaeology. These terraces will be impacted by a proposed open cut

pipe trench, construction compounds and entry points for a trenchless crossing of the River Meon. Holocene Alluvium in the Meon Valley is also crossed but the proposed trenchless crossing of the Meon will likely prevent impacts.

- GCZ 17b – Valley containing Slope Deposits, with a possible Holocene channel in the base. The Slope Deposits may include Holocene Colluvium overlying Pleistocene Head. The sediments have not been investigated and their potential to contain archaeology is uncertain, but prehistoric archaeology, which could include surfaces associated with in situ lithic scatters, could occur. The possible Holocene channel has only been identified in LiDAR data and its geoarchaeological potential is unknown. Both the Slope Deposits and possible channel will be impacted on by a proposed open cut pipe trench.
- GCZ 19 – Valley of Kitnocks Gully, a tributary of the River Hamble. The valley contains sequences of Slope Deposits and areas where the BGS map Holocene Alluvium. These Slope Deposits may include Holocene Colluvium and Pleistocene Head Deposits, which may provide contexts for significant prehistoric archaeology, as indicated by a large Mesolithic lithic assemblage from a similar landscape setting, located to the south at Shedfield. The Holocene Alluvium has not been investigated and its geoarchaeological potential is unknown. Both the Slope Deposits and Alluvium will be impacted by a proposed open cut pipeline trench.
- GCZ 21 – Pleistocene river terraces of the River Hamble and overlying Slope Deposits, and Holocene Alluvium. Few deposit records are available, and understanding of the deposits present is heavily reliant on BGS mapping. The specific distribution and the number of river terraces is uncertain. Geoarchaeological potential is similarly poorly understood but large amounts Palaeolithic archaeology is known from the terraces of the River Test, of which the Hamble is a tributary, which indicates significant potential for these terraces to contain Palaeolithic archaeology. The River Terrace Deposits will be impacted by a proposed open cut pipe trench, compounds and entries for a trenchless crossing of the Hamble. Impacts on the Holocene Alluvium will be limited by the trenchless crossing, with the exception of the proposed location of the northern trenchless crossing entry, which is located on the edge of Holocene Alluvium. This landscape setting is where prehistoric activity could be expected and which is indicated by residual finds of Mesolithic lithic material from excavations to the north at the Bishop's Place in Bishop's Walton, similarly, located on the edge of the Holocene floodplain.
- GCZ 24 – Holocene floodplain of the Bow Lake Stream where possible palaeochannels with geoarchaeological potential have been identified (Wessex Archaeology 2023a). One channel is adjacent to the western end of the trenchless crossing of the B3354, and may be impacted. The potential for archaeological evidence at the southern and northern edges of the alluvial floodplain, at locations where short trenchless crossings of the B3354 and Bow Lake Stream linked to an open cut pipe trench are proposed, has been highlighted. The crossing entries and the open cut trench could impact on archaeology.
- GCZ 26 – River terraces of the River Itchen, locally overlain by Head Deposits. The terraces will be impacted by an open cut pipe trench, construction compounds and entries for trenchless crossings of the two rivers, whilst the trenchless crossings will likely prevent impacts on deposits within the floodplains. At least two Pleistocene River Terraces will be impacted, Terrace 3 and Terrace 1. The Terrace 3 deposits have high Palaeolithic archaeological potential. They are equivalent to those located to the north at Colden Common, which have produced the most significant Lower to Middle Palaeolithic archaeological assemblages known from the terraces of the River

Itchen. The geoarchaeological potential of Terrace 1 is less well understood but these deposits have also produced Palaeolithic archaeology.

8.2 Recommendations

8.2.1 The results of the GI monitoring and review of the geoarchaeological resource has demonstrated that in defined locations the Project design proposals will impact on deposits that have significant geoarchaeological potential. In order to mitigate against these impacts a program of targeted geoarchaeological investigations will be required. These investigations should be guided by Project-specific research objectives. A series of Project-specific research objectives and targeted recommendations for geoarchaeological investigations are provided below.

Project-specific research objectives

8.2.2 Based on the results of the GI monitoring and review of the geoarchaeological resource that is likely to be impacted by the Project, Project-specific geoarchaeological research objectives, presented as research questions, are listed below and linked to specific deposits present in the GCZs in **Table 48**. These questions are framed with reference to research questions and objectives outlined in the *Archaeological Strategy for Hampshire* (Hampshire County Council 2012) and ordered by geoarchaeological landscape features and deposits.

<u>Pleistocene Raised Beach Deposits</u>

- G1 – Where are Pleistocene Raised Beach Deposits located within the Project Boundary?
- G2 – How old are Pleistocene Raised Beach Deposits? How do these deposits fit within the stratigraphic and palaeogeographic succession for the Pleistocene raised beach sequence of the Sussex and Hampshire coastal plain?
- G3 – What depositional environments do the Pleistocene Raised Beach Deposits reflect (e.g. marine, estuarine, terrestrial, fluvial etc.)? Do the deposits include evidence for Pleistocene landsurfaces?
- G4 – What range of palaeoenvironmental datasets do sediments within Raised Beach Deposits preserve? What do these datasets tell us about Palaeolithic landscapes and environments?
- G5 – Are significant Palaeolithic archaeological remains preserved within the Raised Beach Deposits? Do these include evidence for in situ/minimally disturbed activity that is contemporary with the deposits?

<u>Lower Coastal Plain Pleistocene freshwater deposits</u>

- G6 – What is the distribution of Lower Coastal Plain Pleistocene freshwater deposits with the Project Boundary?
- G7 – What depositional processes are reflected by sequences of Lower Coastal Plain Pleistocene freshwater deposits? Within what landscape features are they formed?
- G8 – How old are sequences of Lower Coastal Plain Pleistocene freshwater deposits? How do chronologies compare to other known occurrences of similar deposits in areas located to the east of the Project Boundary, in areas towards Chichester Harbour (e.g. Warblington)?
- G9 – What range of paleoenvironmental evidence is preserved within the Lower Coastal Plain Pleistocene freshwater deposits? What Palaeolithic landscapes and environments does this evidence reflect?

- G10 – What Palaeolithic archaeology, and of which archaeological periods (Middle, Upper), is present within sediments within the Lower Coastal Plain Pleistocene freshwater deposits? Do these deposits preserve significant Palaeolithic archaeology?

Pleistocene River Terrace Deposits (Wallington River, River Hamble, Meon and Itchen)

- G11 – What is the distribution of Pleistocene River Terrace deposits within the Project boundary?
- G12 – How many different river terraces belonging to each of the different Pleistocene river systems are there?
- G13 – How old are the different terraces? How do they correlate across river systems within the Project Boundary and with more extensively researched terrace sequences of other Solent drainage systems, in particular those of the River Test?
- G14 – How were different units within different terraces deposited? What different depositional contexts do these represent (e.g. high energy braided fluvial systems, overbank floodplain deposits, river edge fluvial/colluvial sediments etc.)? How are deposits reflecting different modes of deposition distributed both laterally and vertically within terraces?
- G15 – What archaeological records, and from which archaeological periods of the Palaeolithic, are preserved within different terraces (e.g. Lower, Middle and Upper)? To what extent have archaeological finds within the terraces been fluvially reworked? Do the terraces contain horizons preserving minimally disturbed/in situ archaeology?
- G16 – What patterns of Palaeolithic settlement history and occupation do archaeological records from the Pleistocene River Terrace Deposits reflect? How do these compare to regional settlement histories associated with fluvial systems of the Solent rivers, and national patterns of human presence and absence?

Pleistocene Head overlying Raised Beach and River Terrace Deposits

- G17– How old are Pleistocene Head Deposits overlying Raised Beach and River Terrace Deposits?
- G18 – What processes formed these Head sequences?
- G19 – Do these Head Deposits preserve significant Palaeolithic archaeology and palaeoenvironmental evidence?

Solution features

- G20 – What evidence is there for solution features within chalk landscapes crossed by the Project Boundary, and what factors influence the location and development of such features?
- G21 – What geoarchaeological deposits are preserved within solution features? What are the formation processes of these deposits?
- G22 – How old are deposits infilling solution features? Do they include both Pleistocene and Holocene sediments?
- G23 – Are significant archaeological and palaeoenvironmental remains preserved within deposits in solution features? Do they include in situ archaeology associated with stasis horizons (e.g. buried soils)?
- G24 – To what extent is preservation of archaeological remains in solution features reflective of solution features acting as foci for prehistoric activity, as opposed to

solution features being the capture points for geoarchaeological deposits eroded from elsewhere in chalk landscapes?

Dry Valleys and Slope Deposits (Pleistocene Head and Holocene Colluvium)

- G25 – What is the extent and depth of Slope Deposits within dry valleys crossed by the Project Boundary?
- G26 – What is the date of Slope Deposits within dry valleys? Do they include both Pleistocene Head and Holocene Colluvium?
- G27 – How old are Pleistocene Head Deposits within dry valleys? How do they contribute to our understanding of Pleistocene landscape evolution?
- G28 – Do Pleistocene deposits within dry valleys include windblown sediments (loess and/or coversands)?
- G29 – Are significant Palaeolithic archaeological and palaeoenvironmental remains preserved within Head Deposits within dry valleys? Do they include in situ archaeology associated with status horizons (e.g. buried soils)?
- G30 – What are the spread of dates for Holocene Colluvium within dry valleys? Do they cluster with specific periods that can be linked to archaeological and lands-use practices across the Project?
- G31 – Can we link the formation of Holocene colluvial deposits within dry valleys to changes in land-use evidence in archaeological and palaeoenvironmental data?
- G32 – Are significant archaeological layers, features and/or deposits sealed within and/or beneath Holocene Colluvium within dry valleys?
- G33 – Do Holocene colluvial deposits preserve significant palaeoenvironmental records reflective of changes in environment and/or landscape-use?

Holocene Alluvium

- G34 – Are peat/organic deposits with geoarchaeological potential preserved within Holocene alluvial deposits that will be impacted by the Project? What archaeological and/or palaeoenvironmental evidence do they preserve?
- G35 – Are paleochannels with geoarchaeological potential preserved within Holocene alluvial deposits that will be impacted by the Project? What archaeological and/or palaeoenvironmental evidence do they preserve?
- G36 – What date are Holocene alluvial sequences?
- G37 – What is the potential of alluvial/colluvial sequences on the wetland/dryland margins at the edges of Holocene alluvial floodplains to preserve significant archaeology?

Table 48 Locations within the Project Boundary identified for geoarchaeological investigations, principal geoarchaeological deposits that will be impacted and relevant Project-specific research objectives

GCZ	Name	Landscape features	Impacted Geoarchaeological Deposits	Project-Specific Research Objectives
2	Thicket Bottom - Stockheath	Dry valley system and minor watercourse that forms north bank tributary of Hermitage Stream	Pleistocene Head / Holocene Colluvium within valley	G25–33
4a-b	Hermitage Stream North	Valley of the Hermitage Stream	Holocene Alluvium Pleistocene Head / Holocene Colluvium in valley	G25–34, G34, G36
5b	Bedhampton East	West of valley of Hermitage Stream	Pleistocene Head Pleistocene Raised Beach Deposits	G1–5, G17–19
5c	Bedhampton East	West of valley of Hermitage Stream	Pleistocene Head Pleistocene Raised Beach Deposits	G1–5, G17–19
6	Brockhampton – Budds Farm	Confluence of Hermitage Stream and Brockhampton Stream in west of Langstone Harbour	Alluvium of Hermitage Stream (Alluvium) Estuarine Alluvium in Langstone Harbour (Clays) ?Pleistocene Gravelly Clays Pleistocene ?Raised Beach Deposits Lower Coastal Plains Pleistocene freshwater deposits (Chalky Silts and Gravels)	G1–5, G6–10
8	Portsdown Hill	Chalk ridge with dry valleys incised through northern slopes which form southern side valleys of main valley of Wallington River	Pleistocene Head / Holocene Colluvium with dry valleys Pleistocene / Holocene deposits within solution features	G20–24, G25–33

GCZ	Name	Landscape features	Impacted Geoarchaeological Deposits	Project-Specific Research Objectives
12	Wallington River West	Valley of the Wallington River	Pleistocene / Holocene Slope Deposits with dry valley Pleistocene River Terrace Deposits Pleistocene / Holocene deposits within solution features	G11–16, G17–19, G20–24
15	River Meon	Valley of the River Meon	Pleistocene / Holocene Slope Deposits Pleistocene River Terrace Deposits	G11–16, G17–19.,
17b	Cloverfield Farm	Head of dry valley which develops into of east bank tributary of the River Hamble	?Holocene Alluvium Pleistocene Head / Holocene Colluvium in valley	G25–33, G34, G36–37
19	Kitnocks Gully	Upper valley of Kitnocks Gully, an east bank tributary of the River Hamble	?Holocene Alluvium Pleistocene Head / Holocene Colluvium in valley	G25–33, G34, G36–37
21	River Hamble	Valley of the River Hamble	Holocene Alluvium Pleistocene / Holocene Slope Deposits with dry valley Pleistocene River Terrace Deposits	G11–16, G17–19, G37
24	Fisher's Pond	Valley of the Bow Lake Stream and valley of Fisher's Pond	Holocene Alluvium Pleistocene Head / Holocene Colluvium in valley	G25–33, G34–37
26	Itchen Valley	Valleys of the River Itchen and Otter Bourne	Pleistocene Head Pleistocene River Terrace Deposits	G11–16, G17–19

Geoarchaeological investigations

8.2.3 Based on the results of the GI monitoring and review of the geoarchaeological resource that is likely to be impacted on by the Project, targeted geoarchaeological investigations are recommended. Recommendations are provided that are linked to Project-specific research objectives.

8.2.4 A tiered approach to these investigations is recommended, based on the following criteria:

- Category 1 – GCZs which contain Quaternary geological deposits with potential to contain a significant geoarchaeological resource, which will be impacted on by Project and which require stand-alone purposive geoarchaeological investigations to address the relevant Project-specific research objectives.
- Category 2 – GCZs which contain Quaternary geological deposits with potential to contain a significant geoarchaeological resource, which will be impacted on by Project impacts, but which can be investigated through geoarchaeological consultation during any other required archaeological investigations (e.g. trial trenching, strip and map excavation) to address the relevant Project-specific research objectives.
- Category 3 – GCZS where geoarchaeologically significant deposits are either unlikely to be present or unlikely to be impacted, and for where no geoarchaeological investigations are recommended.

8.2.5 Recommendations for initial geoarchaeological investigations are summarised in **Table 49** and detailed recommendations for Category 1 purposive geoarchaeological investigations in relevant GCZs are outlined below. The results of these investigations will help to refine relevant Project-specific research questions, in turn informing further stages of geoarchaeological work.

Table 49 Geoarchaeological investigation priorities for GCZs

GCZ	Project impacts	Impacted Geoarch. Deposits	Investigation category 1	Investigation category 2	Investigation methods
2	Open cut pipeline trench and a construction compound in the north, tunnelled pipeline to the south	Pleistocene Head / Holocene Colluvium within valley		x	Geoarchaeological consultation during any archaeological investigations in the Project Boundary within the north of the zone
4a-b	Tunnelled pipeline	Holocene Alluvium Pleistocene Head / Holocene Colluvium in valley		x	Geoarchaeological consultation during any archaeological investigations at tunnel entrances/shafts
5b-c	Tunnelled pipeline and compound	Pleistocene Head Pleistocene Raised Beach Deposits	x		Targeted geoarchaeological test pits/boreholes at tunnel entrances/shafts and compound location

GCZ	Project impacts	Impacted Geoarch. Deposits	Investigation category 1	Investigation category 2	Investigation methods
6	Construction of the new Water Recycling Plant, tunnelled pipelines to the new Water Recycling Plant with open cut pipe trench sections at the plant and in the south, and construction compounds at the Water Recycling Plant and in areas to the north	Holocene Alluvium ? Pleistocene Raised Beach Deposits Lower Coastal Plains Pleistocene freshwater deposits	x		Targeted geoarchaeological test pits/boreholes at tunnel entrances/shafts and compound locations in the north
8	Open cut pipe trench and compound locations	Pleistocene Head / Holocene Colluvium with dry valleys Pleistocene / Holocene deposits within solution features	x		Targeted geoarchaeological test pits through deposits in dry valleys Geophysical surveys targeted where solution features are most likely to be present
12	Open cut pipe trench, trenchless crossing of Wallington River, and compound locations	Pleistocene / Holocene Slope Deposits within dry valley Pleistocene River Terrace Deposits Pleistocene / Holocene deposits within solution features	x		Targeted geoarchaeological test pits through and River Terrace and Slope Deposits Geophysical surveys targeted where solution features are most likely to be present
15	Open cut pipe trench, trenchless crossing of River Meon, and compound locations	Pleistocene / Holocene Slope Deposits Pleistocene River Terrace Deposits	x		Targeted geoarchaeological test pits through and River Terrace and Slope Deposits

GCZ	Project impacts	Impacted Geoarch. Deposits	Investigation category 1	Investigation category 2	Investigation methods
17b	Open cut pipeline trench	?Holocene Alluvium Pleistocene Head / Holocene Colluvium in valley	x		Targeted geoarchaeological test pits through Head and Holocene Alluvium
19	Open cut pipeline trench	?Holocene Alluvium Pleistocene Head / Holocene Colluvium in valley	x		Targeted geoarchaeological test pits through Head and Holocene Alluvium
21	Open cut pipe trench, trenchless crossing of River Hamble, and compound locations	Holocene Alluvium Pleistocene / Holocene Slope Deposits with dry valley Pleistocene River Terrace Deposits	x		Targeted geoarchaeological test pits through and River Terrace and Slope Deposits, and Holocene Alluvium located on northern edge of floodplain
24	Open cut pipe trench, trenchless crossings of the B3354 and Bow Lake Stream, and compound locations	Holocene Alluvium	x		Geoarchaeological borehole survey targeting possible palaeochannel adjacent to trenchless crossing of B3354
		Pleistocene Head / Holocene Colluvium in valley		x	Geoarchaeological consultation during any archaeological investigations in areas of Slope deposits and Holocene Alluvium
26	Open cut pipe trench, trenchless crossings of the River Itchen and the Otter Bourne and compound locations	Pleistocene Head Pleistocene River Terrace Deposits	x		Targeted geoarchaeological test pits through Head and River Terrace Deposits

GCZs 5b and 5c

8.2.6 Entrances/shafts associated with a tunnelled pipeline and the construction of compounds may impact on Pleistocene Raised Beach Deposits and overlying Head deposits in these zones. These deposits have potential to contain a significant geoarchaeological resource, which could address Project-specific research objectives G1–5 and G17–19. Investigation of this potential through geoarchaeological boreholes and/ormachine-dug test pits is recommended.

8.2.7 Specific methods of investigations will be dependent on depths of relevant deposits at these locations and the depths of proposed impacts. Tunnel shafts/entrances may impact on geoarchaeologically significant deposits to depths which would require boreholes to investigate. Impacts at proposed compound locations will be dependent on compound construction requirements. If impacts are limited to topsoil stripping, compounds are unlikely to impact on geoarchaeologically significant deposits. If deeper impacts within compound location are required, these would likely impact on geoarchaeologically significant deposits and test pits will likely be the most appropriate method of investigation. The locations of entrances/shafts are currently uncertain and specific locations for geoarchaeological investigations in these zones cannot currently be determined. **Figure 48** illustrates areas which should be considered for these investigations.

GCZ 6

8.2.8 This zone contains Quaternary deposits captured within a basin that has developed in the chalk bedrock. Deposits highlighted as geoarchaeologically significant include Chalky Gravels and Silts, which likely belong to sequences of Pleistocene freshwater and solifluction deposits, overlying Gravelly Clays and likely Holocene alluvial Clays formed in Langstone Harbour. Within areas of landfill, these deposits can occur beneath >10m of made ground, whilst outside of the landfill they can occur directly beneath topsoil. These deposits have potential to contain significant geoarchaeological evidence, which could address Project-specific research objectives G1–5 and G6–10.

8.2.9 Review of GI data in relation to proposed Project impacts suggests that the deposits with geoarchaeological potential will principally be impacted in areas of GCZ 6 that are outside of the footprint of the former landfill and that will be impacted by tunnel entrances/shafts associated with tunnelled pipelines to the new Water Recycling Plant, limited areas outside of the area of landfill where the Water Recycling Plant is to be located, and construction compound locations situated in the north. Additionally, as these deposits occur to c. 20m bgl, it is possible that they may be impacted by the tunnelled pipeline itself

8.2.10 Geoarchaeological investigation of these deposits via machine-dug geoarchaeological test pits and/or boreholes in areas of impacts is recommended. The areas for which such investigations should be considered are highlighted in **Figure 48**. The methods of investigation that should be applied in particular locations are dependent on the on depths of deposits and overlying made ground, and the depths of proposed impacts. Generally, boreholes are likely to be the most appropriate method of investigation in most areas, with test pitting restricted to proposed compound locations situated in the north of the zone. During monitoring four geoarchaeological bulk samples of were recovered from parts of a sequence through the top of Chalky Silts and Gravels and the base of overlying Gravelly Clays. Whilst suitable for palaeoenvironmental assessment, alone these have limited potential for addressing Project-specific research questions. Consequently, it is recommended that these samples be retained and considered as part of any future program of geoarchaeological sampling and assessment.

GCZ 8

8.2.11 GCZ 8 contains two types of landscape capture points which can contain deposits with significant geoarchaeological potential. These are dry valleys and solution features. Contained deposits will be impacted by an open cut pipe trench. Impacts at proposed compound locations will be dependent on compound construction requirements. If impacts are limited to topsoil stripping, compounds are unlikely to impact on geoarchaeologically significant deposits.

8.2.12 Slope Deposits within the dry valleys have potential to contain a geoarchaeological resource that could address Project-specific research objectives G25–33. In areas where they will be impacted, investigation of these deposits through geoarchaeological machine-dug test pits is recommended. Locations where these deposits will be impacted and where test pitting is recommended are illustrated in **Figure 49**. It is recommended that geoarchaeological machine dug test pits are excavated perpendicular to the orientation of the valleys to provide cross section through the deposits and establish the presence/absence of stasis horizons which could be associated with in situ archaeology. In each test pit, samples should be taken throughout the Quaternary deposits for on-site assessment for archaeology. Should deposits with palaeoenvironmental potential be identified, appropriate samples for assessment should be taken from test pit sections; this may require stepping test pits. Investigations of these deposits during other works could be considered, if geoarchaeological access to sections through these deposits could be facilitated, as required.

8.2.13 Deposits captured within solution features have the potential to contain geoarchaeological evidence that could address Project-specific objectives G20–24. Review of LiDAR data has highlighted areas within GCZ 8 where possible solution features with surface expression are visible. Solution features with surface expression are indicative of areas of chalk landscapes where solution features with no surface expression occur. Consequently, the presence of visible solution features highlights area where the open cut pipe trench and compound locations may encounter, and impact on, fully infilled solution features. In order to identify any solution features within these areas of proposed impacts, initial Electrical Resistivity Tomography (ERT) surveys are recommended. Areas highlighted for geophysical survey are illustrated in **Figure 50**. It is recommended that geoarchaeological trenches are machine-excavated in spits across any identified solution features to assess for archaeology and to enable palaeoenvironmental sampling from exposed sections, as required.

GCZ 12

8.2.14 Within this zone an open cut pipe trench, entry points to a trenchless crossing of Wallington River, and compound locations will impact on geoarchaeologically significant deposits comprising river terraces of the Wallington River and Slope Deposits located within a dry valley that is thought to have contained a former Pleistocene course of the river. These have the potential to address Project-specific research objectives G11–16 and G17–19.

8.2.15 Geoarchaeological investigation of these deposits through Palaeolithic machine dug test pits is recommended, with samples taken throughout the deposits for on-site assessment for archaeology. Should deposits with significant palaeoenvironmental potential be identified, samples suitable for assessment should be taken. Areas of impacts highlighted for test pitting are illustrated in **Figure 51**.

8.2.16 In the east of the zone the proposed open cut pipe trench crosses areas where possible solution features have been identified, which have potential to contain deposits preserving significant geoarchaeological evidence. In this area initial Electrical Resistivity Tomography

(ERT) surveys to establish the location and extent of these landscape features is recommended. Areas highlighted for geophysical survey are illustrated in **Figure 51**. Based on the results, it is recommended that geoarchaeological trenches are excavated in machine dug spits across the solution features to assess for archaeology, with palaeoenvironmental sampling from exposed sections, as required.

GCZ 15

8.2.17 Within GCZ 15 Project impacts, which comprise an open cut pipe trench, entry points to a trenchless crossing of the River Meon and compound locations, will impact on up to seven different Pleistocene terraces of the Meon. These deposits have the potential to contain a significant geoarchaeological resource, principally Palaeolithic archaeology, that could address Project-specific research objectives G11–16 and G17–19. It is recommended that these are investigated in areas highlighted in **Figure 51** through geoarchaeological machine-dug test pits, with samples taken throughout the deposits for on-site assessment for archaeology.

GCZ 17b

8.2.18 Within GCZ 17b an open cut pipe trench will cross through sequences of Slope Deposits, which may include Holocene Colluvium overlying Pleistocene Head, that have geoarchaeological potential and which could contain evidence to address Project-specific research objectives G25–33. The trench will also cross the location of a possible Holocene alluvial channel, which could contain geoarchaeologically significant deposits. Geoarchaeological machine dug test pits to investigate these deposits will enable identification of any archaeology and samples to be taken for palaeoenvironmental assessment, if required. These test pits should be located in areas of impacts highlighted in **Figure 52**.

GCZ 19

8.2.19 Within this zone an open cut pipe trench will cross the valley of Kitnocks Gully, where it contains Slope Deposits that may include Pleistocene Head Deposits and Holocene Colluvium. These sediments have been highlighted as having significant geoarchaeological potential, which may include evidence to address Project-specific research objectives G25–33. Additionally, the pipe trench will cross areas where Holocene Alluvium within the base of Kitnocks Gully is mapped by the BGS, and which may have geoarchaeological potential.

8.2.20 Geoarchaeological investigation of these areas through machine dug test pits is recommended, in order to assesses for archaeology and allow any deposits with significant palaeoenvironmental potential to be sampled. It is recommended that these test pits are located within areas of impacts illustrated in **Figure 52**.

GCZ 21

8.2.21 The principal deposits with significant geoarchaeological potential that will be impacted in this zone are Pleistocene river terrace deposits of the River Hamble and, locally, Slope Deposits. These have been highlighted as having potential to contain geoarchaeologically significant evidence which could be used to address Project-specific research objectives G11–16 and G17–19. These will be impacted by an open cut pipe trench, entry points to a trenchless crossing of the River Hamble and compound locations. Additionally, the western entry to the trenchless crossing is located on the edge of the Holocene floodplain in an area where deposits highlighted as having potential to contain evidence of prehistoric activity are present that could address Project-specific research objective G37. To assess for significant archaeology within these deposits, geoarchaeological machine-dug test pits are recommended in areas of impacts highlighted in **Figure 53**.

GCZ 24

8.2.22 Within GCZ 24 an open cut pipe trench, entries to trenchless crossings of the B3354 and Bow Lake Stream, and compound locations will impact on Holocene Alluvium of the of the Bow Lake Stream and Slope Deposits identified on the valley edges. These deposits could contain archaeology, the potential for which should be considered as part of any archaeological trial trenching Additionally, in the area adjacent to the western entry to the trenchless crossing of the B3354, a possible palaeochannel has been identified. This palaeochannel has potential to contain significant geoarchaeological remains, in particular palaeoenvironmental evidence, which could address Project-specific research objectives G34–37. Geoarchaeological investigation of this possible palaeochannel through a borehole survey is recommended, the purpose of which would be to characterise, sample and assess the geoarchaeological potential of deposits. The location of the possible palaeochannel and area for the proposed borehole survey is highlighted in **Figure 54**.

GCZ 26

8.2.23 Project impacts in this zone, which will comprise an open cut pipe trench, entries to trenchless crossings of the River Itchen and the Otter Bourne and compound locations, will impact on Pleistocene River Terrace Deposits highlighted as having significant geoarchaeological potential. Two sets of terrace deposits will be impacted. These are:

- Pleistocene River Terrace Deposits of Terrace 3, equivalent with deposits located to the north at Colden Common, which have produced the most significant Lower to Middle Palaeolithic archaeological assemblage currently known from the terraces of the River Itchen.
- Pleistocene River Terrace Deposits of Terrace 1, whose geoarchaeological potential is less well understood but which have also produced Palaeolithic archaeology, which are locally overlain by Pleistocene Head Deposits.

8.2.24 Geoarchaeological evidence within these River Terraces and any overlying Head Deposits have the potential to address Project-specific research objectives G11–16 and G17–19. It is recommended that these deposits are investigated through a program of machine-dug geoarchaeological test pits, targeting locations highlighted in **Figure 55**.

9 ARCHIVE STORAGE AND CURATION

9.1 Museum

9.1.1 The archive resulting from the monitoring is currently held at the offices of Wessex Archaeology in Salisbury. Hampshire Cultural Trust has agreed in principle to accept the archive on completion of the project, under the accession code **WINCM:AY849**.

9.2 Preparation of archive

Physical archive

9.2.1 The archive, which includes paper records, and graphics will be prepared following the standard conditions for the acceptance of excavated archaeological material by Hampshire Cultural Trust, and in general following nationally recommended guidelines (Brown 2011; CIfA 2020; SMA 1995).

9.2.2 All archive elements are marked with the **WINCM:AY849**, and a full index will be prepared. The physical archive currently comprises the following:

- 01 files/document cases of paper records

Digital archive

9.2.3 The digital archive generated by the project will be deposited with a Trusted Digital Repository, in this instance the Archaeology Data Service (ADS), to ensure its long-term curation. Digital data will be prepared following ADS guidelines (ADS 2013 and online guidance) and accompanied by metadata.

9.3 Selection strategy

9.3.1 It is widely accepted that not all the records and materials (artefacts and palaeoenvironmental data) collected or created during the course of an archaeological project require preservation in perpetuity. These records and materials will be subject to selection in order to establish what will be retained for long-term curation, with the aim of ensuring that all elements selected to be retained are appropriate to establish the significance of the project and support future research, outreach, engagement, display and learning activities, i.e. the retained archive should fulfil the requirements of both future researchers and the receiving Museum.

9.3.2 The selection strategy, which details the project-specific selection process, is underpinned by national guidelines on selection and retention (Brown 2011, section 4, CIfA n.d.) and generic selection policies (SMA 1993; Wessex Archaeology's internal selection policy) and follows CIfA's *Toolkit for Selecting Archaeological Archives*. It should be agreed by all stakeholders (Wessex Archaeology's internal specialists, external specialists, local authority, museum) and fully documented in the project archive.

9.3.3 Project-specific proposals for selection are presented below. These proposals are based on recommendations by Wessex Archaeology's internal specialists and will be updated in line with any further comment by other stakeholders (museum, local authority). The selection strategy will be fully documented in the project archive.

9.3.4 Any material not selected for retention may be used for teaching or reference collections by Wessex Archaeology.

Finds

9.3.5 No finds were recovered during the monitoring.

Palaeoenvironmental, sedimentological and scientific dating samples

9.3.6 A small number of sediment samples were taken during the monitoring. These will be retained for the duration of the project.

Documentary records

9.3.7 Paper records comprise site registers (other pro-forma site records are digital), drawings and reports (Written Scheme of Investigation, client report). All will be retained and deposited with the project archive.

Digital data

9.3.8 The digital data comprise site records (tablet-recorded on site) in spreadsheet format; finds records in spreadsheet format; survey data; photographs; reports. All will be deposited, although site photographs will be subject to selection to eliminate inferior quality and duplicated images, and any others not considered directly relevant to the archaeology of the site.

9.3.9 Wessex Archaeology follows national guidelines on selection and retention (SMA 1993; Brown 2011, section 4). In accordance with these, and any specific guidance prepared by

the museum, a process of selection and retention will be followed so that only those artefacts or ecofacts that are considered to have potential for future study will be retained. The selection policy will be agreed with the museum and is fully documented in the project archive.

9.4 Security copy

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

9.5 OASIS

9.5.1 An OASIS (online access to the index of archaeological investigations) record (http://oasis.ac.uk) has been initiated, with key fields completed (**Appendix 8**). A .pdf version of the final report will be submitted following approval by the Archaeologist at the New Forest National Park Authority on behalf of the LPA. Subject to any contractual requirements on confidentiality, copies of the OASIS record will be integrated into the relevant local and national records and published through the Archaeology Data Service (ADS) ArchSearch catalogue.

10 COPYRIGHT

10.1 Archive and report copyright

10.1.1 The full copyright of the written/illustrative/digital archive relating to the project will be retained by Wessex Archaeology under the *Copyright, Designs and Patents Act 1988* with all rights reserved. The client will be licenced to use each report for the purposes that it was produced in relation to the project as described in the specification. The museum, however, will be granted an exclusive licence for the use of the archive for educational purposes, including academic research, providing that such use conforms to the *Copyright and Related Rights Regulations 2003*.

10.1.2 Information relating to the project will be deposited with the Historic Environment Record (HER) where it can be freely copied without reference to Wessex Archaeology for the purposes of archaeological research, or development control within the planning process.

10.2 Third party data copyright

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

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APPENDICES

Appendix 1 Monitored interventions

Phase	Intervention	Total depth (m)	Type	Archaeological monitoring	Geoarchaeological monitoring
1	BH108	60	RC	Yes	Yes
1	BH109	18.50	RC	Yes	Yes
1	BH301	100	RC	Yes	Yes
1	BH302	90	RC	Yes	Yes
1	BH303	115	RC	Yes	Yes
1	BH501	45	CP+RC	No	Yes
1	BH502	25	CP+RC	No	Yes
1	TP110	4	TP	Yes	No
1	TP111	4	TP	Yes	No
1	TP112	4	TP	Yes	No
1	TP304	4	TP	Yes	Yes
1	TP305	4	TP	Yes	Yes
1	TP306	4	TP	Yes	Yes
1	TP501	4	TP	No	Yes
1	TP502	4	TP	No	Yes
1	TP503	4	TP	No	Yes
1	TP504	4	TP	Yes	Yes
1	TP505	4	TP	Yes	Yes
1	TP506	4	TP	Yes	Yes
1	TP507	4	TP	Yes	Yes
1	TP508	4	TP	Yes	Yes
1	TP509	4	TP	Yes	Yes
2	2E3000RC	30	RC	Yes	Yes
2	2E3001RC	8	RC	Yes	Yes
2	2E3002RC	30	RC	Yes	Yes
2	2F3500DS	6	DS	Yes	Yes
2	2F3501DS	6	DS	Yes	Yes
2	2F3503SA	20	CP	No	Yes
2	2G4000SA	20	CP	No	Yes
2	2G4001SA	20	CP	No	Yes
2	2G4002DS	4	TP	No	Yes
2	2G4003DS	6	DS	No	Yes
2	2G4004DS	6	DS	No	Yes

Phase	Intervention	Total depth (m)	Type	Archaeological monitoring	Geoarchaeological monitoring
2	2K5500SR	20	CP+RC	No	Yes
2	2K5501SR	20	CP+RC	No	Yes
2	2L6000TP	4	TP	Yes	No
2	2L6001TP	4	TP	Yes	No
2	2L6002SA	15	CP	No	Yes
2	2L6003SA	15	CP	Yes	Yes
2	2L6004TP	4	TP	Yes	No
2	2L6005SA	10	CP	Yes	Yes
2	2L6006TP	4	TP	Yes	No
2	2L6007DR	20	DS+RC	Yes	Yes
2	2L6008DR	20	DS+RC	Yes	Yes
2	2L6009DR	20	DS+RC	Yes	Yes
2	2L6010DR	20	DS+RC	Yes	Yes
2	2L6011SR	20	CP+RC	No	Yes
2	2M6507SA	20	CP	No	Yes
2	2M6508SA*	20	CP	No	Yes
3a	BH505	40	CP	Yes	Yes
3a	BH506	55	CP	No	Yes
3a	BHP01	30	CP	No	Yes
3a	BHP02	30	CP	No	Yes
3a	BHP05	25	CP	No	Yes
3a	BHP06	35	CP	No	Yes
3a	TPP01	4	TP	No	Yes
3a	TPP02	4	TP	No	Yes
3b	3E3019DS	6	DS	Yes	No
3b	3E3022HP	1.2	HP	Yes	No
3b	3E3106TP	4	TP	Yes	No
3b	3E3107HP	1.2	HP	Yes	No
3b	3E3109HP	1.2	HP	Yes	No
3b	3E3111HP	1.2	HP	No	Yes
3b	3E7501IT	2.5	TP	Yes	Yes
3b	3E7502IT	2.5	TP	Yes	Yes
3b	3E7503IT	2.5	TP	Yes	Yes
3b	3E7505IT	2.5	TP	Yes	Yes
3b	3E7506IT	2.5	TP	Yes	Yes

Phase	Intervention	Total depth (m)	Type	Archaeological monitoring	Geoarchaeological monitoring
3b	3E7507IT	2.5	TP	Yes	Yes
3b	3E7508IT	2.5	TP	Yes	Yes
3b	3H4514HP	1.2	HP	No	Yes
3b	3J5024HP	1.2	HP	No	Yes
3c	3K5511DS	6	DS	No	Yes
3b	3K5604HP	1.2	HP	Yes	Yes
3b	3L6024HP	1.2	HP	Yes	Yes
3c	3E3034HP	1.2	HP	Yes	Yes
3c	3E3035DS	6	DS	Yes	Yes
3c	3E3119HP	1.2	HP	Yes	No
3c	3F3521HP	1.2	HP	Yes	Yes
3c	3F3523DR	30	DR	No	Yes
3c	3F3602HP	1.2	HP	No	Yes
3c	3F7509IT	2.5	IT	No	Yes
3c	3F7510IT	2.5	IT	No	Yes
3c	3F7512IT	2.5	IT	No	Yes
3c	3F7513IT	2.5	IT	No	Yes
3c	3G4023HP	1.2	HP	Yes	No
3c	3G4024DS	6	DS	Yes	Yes
3c	3G4102SA	20	SA	Yes	Yes
3c	3G4105SA	30	SA	Yes	Yes
3c	3G4106SA	30	SA	Yes	Yes
3c	3G7525IT	2.5	IT	Yes	Yes
3c	3G7530IT	2.5	IT	Yes	Yes
3c	3H4600SA	20	SA	No	Yes
3c	3J5017HP	1.2	HP	No	Yes
3c	3L6017HP	1.2	HP	Yes	Yes
3c	3W8534DS	6	DS	No	Yes
3c	3W8535SA	20	SA	No	Yes
3c	3W8538HP	1.2	HP	No	Yes
3c	3W8539DS	6	DS	No	Yes
3c	3W8553DS	6	DS	Yes	Yes
3c	3W8554DS	6	DS	Yes	Yes

Appendix 2 Archaeological monitoring

The stratigraphic succession encountered in each borehole are outlined below. Both heights and coordinates were taken at the centre of each trench. Depth bgl = below ground level.

TP110 (WA110)	**Length 3.50 m**	**Width 0.65 m**	**Depth 4.00 m**
Easting 471855.08	**Northing 108823.02**	**m OD 23.57**	

Context Number	**Fill Of/Filled With**	**Interpretative Category**	**Description**	**Depth BGL**
11001		Topsoil	Soft brown (becoming yellowish brown with depth) slightly gravelly sandy SILT. Gravel is flint of fine gravel to coarse gravel size with rare small cobbles, ≤110x80x35 mm, rounded to angular. Sand is medium. Occasional fine to coarse roots. Clear to gradual contact with 11001.	0.00–0.40
11002		Slope Deposits	Soft, orangish brown mottled greyish brown slightly gravelly clayish SAND. Gravels of flint (occasional to moderately common, fine gravel to coarse gravel sized, ≤80x60x30 mm, rounded to angular). Sand is fine to medium. Becomes more clayish with depth. Gradual contact with 11003. Iron nail retrieved at 0.50 m bgl.	0.40–1.80
11003		Bedrock	Stiff bluish grey sandy CLAY. Sand is medium.	1.80–3.10
11004		Bedrock	Stiff greyish blue sandy CLAY with interbedded mudstone.	3.10–4.00+

TP111 (WA111)	Length 3.50 m	Width 0.65 m	Depth 4.00 m
Easting 471855.04	Northing 108812.35	m OD 23.80	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
11101		Topsoil	Soft brown (becoming yellowish brown with depth) sandy SILT with sparse sub-angular to rounded fine gravel to coarse gravel sized flint. Occasional fine to coarse roots. Sand is medium. Clear to gradual contact with (11102).	0.00–0.30
11102		Subsoil	Soft orangish brown marbled greyish brown silty SAND with uncommon to common, rounded to angular, fine gravel to coarse gravel sized flint. Sand is fine to medium. Gradual contact with (11103).	0.30–0.50
11103		Slope Deposits	Firm orangish brown with locally pale greyish brown mottling very sandy CLAY with uncommon angular to rounded fine gravel to coarse gravel sized flint. Sand is fine to medium. Occasional fine roots. Becoming more clayish with depth, with unit becoming sandy clay at 0.86, ?reverse grading. Moled land drain (CBM; striking NW-SE) at 0.80 m bgl at SW end of TP.	0.50–2.60
11104		Slope Deposits	Brownish orangish mottled bluish grey gravelly clayey SAND. Gravel is sub-angular medium to coarse mudstone. Sand is fine to medium.	2.60–3.20
11105		Bedrock	Bedrock. Stiff grey sandy CLAY.	3.20–4.00

TP112 (WA112)	Length 3.10 m	Width 0.65 m	Depth 4.00 m
Easting 471863.93	Northing 108814.53	m OD 24.44	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
11201		Topsoil	Soft brown (becoming yellowish brown with depth) sandy SILT with sparse sub-angular to rounded, fine gravel to coarse gravel sized flint. Sand is medium. Occasional fine to coarse roots. Clear to gradual contact with (11202).	0.00–0.30
11202		Subsoil	Soft orangish brown marbled greyish brown silty SAND with uncommon to common, angular to rounded, fine gravel to coarse gravel sized flint. Sand is fine to medium. Gradual contact with (11203).	0.30–0.50
11203		Slope Deposits	Soft grey mottled orange sandy CLAY. Sand is medium. Moled land drain (CBM; striking NW-SE) at 0.80 m bgl at southern end of TP.	0.50–1.00
11204		Slope Deposits	Firm bluish grey mottled orange sandy CLAY. Sand is medium.	1.00–2.90
11205		Slope Deposits	Firm orangish brown sandy gravelly CLAY with interbedded mudstone. Sand is medium, gravel is sub-angular medium and coarse mudstone.	2.90–3.60
11206		Bedrock	Stiff bluish grey sandy CLAY.	3.60–4.00+

2L6000TP (WA50)	Length 3.00 m	Width 0.66 m	Depth 4.00 m
Easting 49000.59	Northing 120372.85	m OD 44.65	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
5001		Topsoil	Grass turf over well compacted brown sandy CLAY with common angular to subangular fine gravel to coarse gravel sized flint.	0.00–0.15
5002		Bedrock	Very firm to stiff brownish orange mottled blueish grey sandy CLAY. Sand is medium.	0.15–2.10
5003		Bedrock	Stiff brownish orange mottled blueish grey sandy CLAY with common subrounded fine gravel to gravel sized mudstone. Uncommon coarse components of fine gravel sized euhedral selenite and coarse sand sized fossil shell fragments.	2.10–4.00+

2L6001TP (WA51)	Length 3.75 m	Width 0.65 m	Depth 4 m
Easting 448999.18	Northing 120392.92	m OD 43.35	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
5101		Topsoil	Soft friable brown slightly sandy CLAY with sparse sub-angular to sub-rounded fine gravel to gravel sized flint with moderate to common dark reddish-brown mottles and rootlet stains. Fired clay also present (some retained). Sand is medium. Bioturbated / chemically weathered contact with (5102).	0.00–0.30
5102		Slope Deposits	Geology. Soft to firm mid to pale orangish brown (locally pale grey) slightly sandy CLAY. At northern end there is a CBM land drain at 0.50 m bgl. TP moved south to prevent breaking it. Bioturbated upper contact. Orangish brown colour darkens with depth. Weathered upper portion of London Clay Formation Geology. Orangish brown sand lens at 1.20 m bgl. Shell fragments from 1.80 m bgl. Becoming stiffer with depth.	0.30–1.50
5103		Bedrock	Stiff mid dark blueish grey slightly sandy CLAY with fissile sub horizontal bedding planes and uncommon fine gravel sized mudstone. Few fossil shell fragments in bedding planes.	1.50–4.00+

2L6004TP (WA53)	Length 3.70 m	Width 0.65 m	Depth 4.00 m
Easting 448981.20	Northing 120451.41	m OD 37.58	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
85301		Made ground	Topsoil. Soft, dark brown slightly sandy slightly gravelly clay LOAM. Gravels of flint (sparse, ≤40 mm. sub-angular). Sand is fine to medium. Moderate fine to coarse roots throughout.	0.00–0.10
85302		Made ground	Dump of soil and mixed components including glass, concrete with rebar (380x370x100 mm), fired clay, chalk (none retained). Thinnest to north (downslope).	0.10–0.30
85303		Slope deposits	Orangish-brown silty CLAY. Pockets of orangish sand start occurring 1.00 m bgl. Mica and shell fragments below 1.80 m bgl.	0.30–1.80
85304		Bedrock	Greyish brown, stiff silty CLAY	1.80–4.00+

2L6006TP (WA55)	Length 3.00 m	Width 0.66 m	Depth 2.40 m
Easting 448960.00	Northing 120507.90	m OD 30.34	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
5501		Topsoil	Loose soft light brown to mid brown slightly sandy CLAY with uncommon to common gravel. Coarse components are angular to subangular fine gravel to coarse gravel sized concrete with occasional angular flint and plastic material. Rootlets frequent. Gradual boundary with (5502).	0.00–0.30
5502		Slope Deposits	Moderately firm orange-brown silty clay. Very rare subangular to angular gravel sized clasts of flint. Rare grey-brown clay within unit, but not as a stratigraphic unit (band or lens). Rare black speckling - ?manganese. Gradual boundary with (5503).	0.30–1.40
5503		Bedrock	Firm to very firm bluish-grey to brown-grey CLAY. Semi-regular inclusions of fine gravel to gravel sized gypsum (selenite). Rare orange clay patches, but not as stratigraphic units (band or lens).	1.40–2.40+

3E3019DS (WA3019)	Length 3.00 m	Width 0.65 m	Depth 4.70 m
Easting 462,706.15	Northing 107,567.96	m OD 58.33	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
301901		Topsoil	Moderately firm greyish brown gravelly SILT. Gravel is fine to coarse, subangular to angular flint. Rooting common. Structureless. Gradual to 301902	0.00–0.25
301902		Slope Deposits	Moderately firm slightly reddish brown clayey gravelly SILT. Gravel is chalk (60%) and flint (40%). Chalk is fine to medium subrounded to rounded clasts. Flint is fine to coarse, subangular clasts. Structureless. Gradual to 301902, with very gravelly silt (90% chalk: 10% flint) 1.00-1.10	0.25–1.10
301903		Slope Deposits	Moderately firm whitish brown clayey silty GRAVEL. Gravel is fine (70%) to medium (30%) subangular (40%), subrounded (40%) to rounded (20%) chalk clasts. Matrix supported. Moderately well sorted. Moderately low sphericity. Structureless. Sharp to 301904	1.10–1.40
301904		Bedrock	Very firm to very stiff white structureless CHALK. Occasional in situ flint cobbles.	1.40–4.70+

3E3022HP (WA3022)	Length 0.30 m	Width 0.30 m	Depth 0.90 m
Easting 464,031.96	Northing 107,253.84	m OD 64.55	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
302201		Topsoil	Moderately soft, mid brown slightly sandy gravelly SILT. Sand is fine. Gravel is fine to coarse, angular to sub-rounded flint. Rare cobble sized pieces of flint. Structureless. Gradual to 302202	0.00–0.15
302202		Subsoil	Moderately firm reddish brown slightly sandy silty GRAVEL. Sand is fine to coarse. Gravel is fine (20%), medium (40%) to coarse (40%) angular (30%), sub-angular (50%) to rounded (20%) flint. Occasional cobble sized clasts of flint. Matrix supported. Low sphericity. Moderately poorly sorted. Sharp to 302203	0.15–0.48
302203		Slope Deposits	Chalk solifluction deposit. Moderately firm pale whitish brown silty GRAVEL. Gravel is chalk (70%) and flint (30%). Chalk is fine (30%) medium (60%) to coarse (10%), sub-rounded clasts. Flint are fine (30%) to. medium (65%) to coarse (5%) sub-angular (70%) to angular (30%) clasts. Moderately poorly sorted. Matrix supported. Moderately low sphericity.	0.48–0.90

3E3106TP (WA3106)	Length 3.00 m	Width 0.65 m	Depth 4.00 m
Easting 465,290.22	Northing 106,983.14	m OD 56.96	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
310601		Topsoil	Dark brown silty CLAY with occasional gravel. Gravel is subangular, 2-5cm in size. Heavily rooted for first 5cm.	0.00–0.30
310602		Slope Deposits	Light orangish brown slightly gravelly silty CLAY. Gravel is subangular (70%) to subrounded (30%). Very rare subangular flint boulder, 15cm in size. Rest of gravel is 2-5cm in size.	0.30–0.70
310603		Slope Deposits	Mid orangish brown gravelly CLAY. Gravel is subangular (70%) to subrounded (30%). Rare subangular flint boulders, approx. 15cm in size. Rest of gravel is 2-5cm in size.	0.70–1.00
310604		Slope Deposits	Light orangish brown off white chalk gravel CLAY. Chalk is subangular with rare subrounded pieces.	1.00–1.50
310605		Bedrock	Increasingly angular CHALK. Rare subangular flints.	1.50–4.00+

3E3107HP (WA3107)	Length 0.30 m	Width 0.30 m	Depth 4.00 m
Easting 465,046.77	Northing 106,975.02	m OD 66.04	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
310701		Topsoil	Dark brown silty CLAY with frequent subangular flints 2-5cm in size.	0.00–0.60
310702		Slope Deposits	Mid orangish brown silty CLAY with frequent subangular flints 2-5cm in size.	0.60–0.80
310703		Slope Deposits	Greyish brown silty clayey chalky GRAVEL, with rare 5-8cm subangular flints. Gravel is primarily subangular (60%) to subrounded (40%) chalk.	0.80–1.20+

3E3109HP (WA3109)	Length 0.30 m	Width 0.30 m	Depth 1.20 m
Easting 463,625.77	Northing 107,324.02	m OD 62.40	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
310901		Topsoil	Dark slightly greyish brown silty CLAY with frequent subangular flints.	0.00–0.30
310902		Slope Deposits	Light orangish brown off white chalky gravelly CLAY. Gravel is subangular (70%) to subrounded (30%) soft chalk. 2-5cm in size.	0.30–1.20+

3E3119HP (WA3119)	Length 0.30 m	Width 0.30 m	Depth 1.20 m
Easting 462,706.15	Northing 107,567.96	m OD 58.33	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
311901		Topsoil	Dark brown silty CLAY with frequent subangular (80%) to subrounded (20%) flint gravel, 2-5cm in size.	0.00–0.60
311902		Slope Deposits	Off whitish brown chalky silty CLAY. Chalk is very common, giving it the off-white colour, appearing as 0.5-3cm subrounded gravel.	0.60–1.20+

3G4023H (WA4023)	Length 3.00 m	Width 0.65 m	Depth 1.20 m
Easting 456,522.07	Northing 111,908.81	m OD 54.85	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
402301		Topsoil	Moderately soft dark greyish brown gravelly SILT. Gravel is fine to coarse, sub-angular to rounded flint. Rooting common in upper 0.20mm. Structureless. Gradual to 402302	0.00–0.30
402302		Possible River Terrace Deposits	Moderately firm orangish brown clayey GRAVEL. Gravel is fine (50%) , medium (45%) to coarse (5%), sub-rounded (30%), sub-angular (60%) to angular (10%) flint. Low sphericity. Matrix supported. Moderately poorly sorted. Becomes more clayey with depth.	0.30–1.20+

Appendix 3 Geoarchaeological monitoring

The stratigraphic succession encountered in each test pit are outlined below. Both heights and coordinates were taken at the centre of each trench. Depth bgl = below ground level.

Site Code: **271400**	**Site Name:** **Hampshire Water Transfer and Water Recycling Project**	**Borehole ID:** **BH501 (WA8501)**
Coordinates (NGR) X: **447070.00**	**Coordinates (NGR) Y:** **121505.00**	**Level (top):** **23.26 m OD**
		Depth: **16.30 m**

Context Number	**Description**	**Interpretation**	**Depth m BGL**	**Depth m OD**	**Samples**
850101	Soft dark brown slightly sandy SILT with common subangular to subrounded flint gravel of fine gravel to coarse gravel size. Overlain by turf.	Topsoil	0.00–0.20	23.26–23.06	
850102	Dark brown sandy SILT AND GRAVEL. Gravel is subrounded flint, fine gravel to small cobble sized, trending coarse gravel to small cobble.	Subsoil	0.20–0.40	23.06–22.66	
850103	Greyish brown clayish SANDS AND GRAVELS, with gravel being flint trending subrounded to rounded with uncommon subangular to angular clasts. Gravel is fine gravel to large cobble sized trending gravel to coarse gravel sized. Larger clasts trend more rounded than smaller clasts. Silty until 0.60m. Gravel becomes slightly finer and matrix sandier from 3.50m.	River Terrace Deposits	0.40–3.70	22.66–19.36	
850104	Stiff blueish grey CLAY	Bedrock	3.70–5.00+	19.36–18.06+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: BH502 (WA8502)
Coordinates (NGR) X: 446343.00	Coordinates (NGR) Y: 121905.10	Level (top): 17.09
		Depth: 5.10 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
50201	Grass turf over dark brown slightly sandy SILT with common subrounded fine gravel to gravel sized flint. Common rooting.	Topsoil	0.00–0.30	17.09–16.79	
50202	Dark greyish brown slightly sandy SILT AND GRAVEL with gravel being subangular to subrounded fine gravel to coarse gravel sized flint. Gravel is poorly sorted, no grading seen. Weak rooting. Faint hydrocarbon smell noted. Water strike at 0.40m.	Made Ground	0.30–0.50	16.79–16.59	
50203	Moderately well compacted wet moderately dense clast supported dark brownish grey mottled lighter brownish grey slightly silty SANDS AND GRAVELS, with gravel being angular to rounded fine gravel to cobble sized flint. Gravel trends fine gravel sized. Sand is fine to coarse. Clean matrix.	River Terrace Deposits	0.50–1.20	16.59–15.89	
50204	Moderately dense wet silty SANDS AND GRAVELS with gravel being angular to well rounded (trending subangular to subrounded) fine gravel to boulder sized flint. Gravel is predominantly fine to coarse gravel sized, with cobble to boulder sized clasts being uncommon. Larger clasts trend more rounded. Becoming sandier and denser at 3.70m. Gravel becoming finer at 4.20m.	River Terrace Deposits	1.20–4.30	15.89–12.79	
50205	Firm to stiff mid blueish grey slightly sandy CLAY. Sand is fine. No seen coarse components.	Bedrock	4.30–5.10+	12.79–11,99+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Test Pit ID: TP501 (WA501)
Coordinates (NGR) X: 446,510.00	Coordinates (NGR) Y: 121,518.00	Level (top): 23.26 m OD
Length: 3.10 m	Width: 0.65 m	Depth: 1.50 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
5011	Light brown clayish sandy SILT with common sub-angular gravel sized flint. Uncommon coarse components of angular CBM and concrete.	Made Ground	0.00–0.30	23.26–22.96	
5012	Dark brown clast supported slightly sandy clayish GRAVEL, with gravel being sub-angular to sub-rounded fine gravel to cobble sized flint trending cobble sized, with cobble sized flint being abundant. Larger clasts trend more rounded. Sand is medium to coarse. Becoming sandier with depth.	River Terrace Deposits	0.40–1.50+	22.96–21.76+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Test Pit ID: TP502 (WA502)
Coordinates (NGR) X: 447,064.00	Coordinates (NGR) Y: 121,511.00	Level (top): 23.26 m OD
Length: 2.80 m	Width: 0.65 m	Depth: 1.50 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
5021	Light brown clayish sandy SILT with common sub-angular fine gravel to coarse gravel sized flint. Common rooting.	Topsoil	0.00–0.40	23.26-22.86	
5022	Dark brown silty SANDS AND GRAVELS, with gravel being sub-angular to sub-rounded gravel to cobble sized flint. Predominantly coarse gravel to cobble sized. Sand is fine to coarse. Unstable sides.	River Terrace Deposits	0.40–1.60+	22.96-21.66+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Test Pit ID: TP503 (WA503)
Coordinates (NGR) X: 447,052.00	Coordinates (NGR) Y: 121,505.00	Level (top): 23.36 m OD
Length: 3.50 m	Width: 0.65 m	Depth: 1.50 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
5021	0.02 of grass turf over dark brown slightly silty sandy CLAY with common sub-angular to sub-rounded fine gravel to coarse gravel sized flint. Becoming less silty with depth, silt absent by 0.2. Sand is fine to medium. Gravel becoming finer after 0.2, fine gravel to gravel sized.	Topsoil	0.00–0.50	23.36-22.86	
5022	Dark greyish brown slightly silty sandy GRAVEL, with gravel being sub-angular to sub-rounded fine gravel to cobble sized flint. Gravel trends coarse gravel to cobble sized. Sand is fine to medium.	River Terrace Deposits	0.50–1.40+	22.86-21.96+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2F3503SA (WA8004)
Coordinates (NGR) X: 458541.72	Coordinates (NGR) Y: 108691.51	Level (top): 10.00 m OD
		Depth: 10 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
800401	Dark brown slightly clayey gravelly SAND with occasional angular to subangular cobble sized flint.	Topsoil	0.00–0.30	10.00–9.70	
800402	Dark brown clayey gravelly SAND with occasional subangular flint cobbles. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse flint.	River Terrace Deposits	0.30–1.80	9.70–8.20	
800403	Soft brown gravelly sandy CLAY. Sand is fine to coarse, and gravel is fine to coarse flint.	River Terrace Deposits	1.80–-2.00	8.20–8.00	
800404	Light sandy gravelly chalky SILT, mixed with soft brown gravelly sandy CLAY. Sand is fine to coarse; gravel is angular to subrounded fine to coarse flint.	River Terrace Deposits	2.00–3.50	8.00–6.50	
800405	Light cream CHALK recovered as sandy gravelly SILT with occasional cobbles. Sand is fine to coarse with angular to rounded fine to coarse chalk gravel with occasional flint.	?Bedrock	3.50–5.30	6.50–4.70	
800506	CHALK BEDROCK. Recovered as sandy GRAVEL with occasional angular to subrounded cobbles.	Bedrock	5.30–10.00+	4.70–0.00+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2G4000SA (WA8007)
Coordinates (NGR) X: 456194.96	Coordinates (NGR) Y: 110259.97	Level (top): 19.29 m OD
		Depth: 20 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
800701	Soft loose light brown CLAY AND GRAVELS with subangular to rounded fine gravel to coarse gravel sized flint clasts. Matrix supported. Roots present. Gradual boundary with (800702).	Topsoil	0.00–0.20	19.29–19.09	
800702	Firm light brown silty SAND AND GRAVELS with gravel being subangular to subrounded fine gravel to cobble sized clasts of flint, with largest clasts 150mm. Gradual boundary with (800703).	River Terrace Deposits	0.20–1.30	19.09–17.99	
800703	Firm reddish brown to grey sandy gravelly CLAY. Sand is fine to coarse with angular to subangular flint gravel.	River Terrace Deposits	1.30–2.50	17.99–16.79	
800704	Stiff brownish red and grey slightly gravelly clay, becoming stiffer with depth.	Bedrock	2.50–20.00+	16.79–0.71+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2G4001SA (WA8008)
Coordinates (NGR) X: 456116.20	Coordinates (NGR) Y: 110350.00	Level (top): 14.33 m OD
		Depth: 10.90 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
800801	Loose brown silty CLAY. Rootlets present. From 0.25 common angular to subrounded fine gravel to coarse gravel sized flint clasts. Gradual boundary with (800801).	Topsoil	0.00–-0.30	14.33–14.03	
800802	Light brown silty SAND AND GRAVELS with gravel being angular to subrounded fine gravel to small cobble sized flint. Clasts trend gravel sized. Some tertiary clasts. Sharp boundary with (800804).	River Terrace Deposits	0.30–0.70	14.03–13.33	
800803	Firm grey to brown-grey CLAY. Greyish brown between 0.7-0.8 only, after which grey.	Bedrock	0.70–10.90+	13.33–3.23+	

2G4002DS (WA11)	Length 3.00 m	Width 0.66 m	Depth 3.00 m
Easting 455957.80	Northing 111181.40	m OD 45.42	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
1101		Made Ground	Dark greyish brown silty CLAY with common subangular fine gravel to coarse gravel sized flint and chalk. Fairly tight compaction. Common fine rooting.	0.00–0.15
1102		Made Ground.	Dark greyish brown silty CLAY, with common subrounded to subangular gravel to coarse gravel sized ≤flint and chalk. Common fine rooting and occasional charcoal and CBM. Fairly compact.	0.15–0.40
1103		Slope Deposits	Firm mid pale brownish grey sandy CLAY with common subangular to subrounded gravel ≤to coarse gravel sized flint. Tight compaction.	0.40–1.20
1104		Bedrock	Firm pale grey mottled orangey brown sandy CLAY. Very tight compaction. No coarse components observed.	1.20–3.00+

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2G4003DS (WA871)
Coordinates (NGR) X: 455966.80	Coordinates (NGR) Y: 111201.00	Level (top): 46.22m OD
		Depth: 4.00 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
87101	Firm dark greyish brown silty CLAY. Fairly tight compaction. Common fine rooting.	Topsoil	0.00–0.15	46.22–46.07	
87102	Firm dark greyish brown silty CLAY with common subangular to subrounded gravel to coarse gravel sized flint and chalk. Common fine rooting with uncommon charcoal and CBM. Fairly compact.	Made Ground	0.15–0.40	46.07–45.82	
87103	Firm light brownish grey sandy CLAY with common subangular to subrounded gravel to coarse gravel sized flint. Tight compaction.	Slope Deposits	0.40–1.20	45.82–45.02	
87104	Firm pale grey mottled orange sandy CLAY. Very tight compaction. No coarse components observed.	Bedrock	1.20-4.00+	45.02–42.22+	

Site Code: 271400	**Site Name:** Hampshire Water Transfer and Water Recycling Project	**Borehole ID:** 2G4004DS (WA828)
Coordinates (NGR) X:	**Coordinates (NGR) Y:**	**Level (top):**
		Depth: 3.45 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
82801	Dark greyish brown silty CLAY. Fairly tight compaction. Common fine rooting.	Made Ground	0.00–0.10		
82802	Dark greyish brown silty CLAY with common subangular to subrounded gravel ≤sized flint and chalk. Common fine rooting and occasional charcoal and CBM. Fairly compact.	Made Ground.	0.10–0.40		
82803	Light brownish grey sandy CLAY AND GRAVEL, with gravel being subangular to subrounded gravel to coarse gravel sized flint. Tight compaction.	Slope Deposits	0.40–0.70		
82804	Firm pale grey mottled orangey brown sandy CLAY. Very tight compaction. No coarse components observed. Gravelly clay 1.30m-1.45, gravel is angular to rounded fine gravel to coarse gravel sized flint.	Slope Deposits	0.70–1.50		
82804	Firm pale grey mottled orangey brown sandy CLAY. Very tight compaction. No coarse components observed. No recovery 2.70-3.00m.	Bedrock	1.50–3.50+		

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2K5500SR (WA8013)
Coordinates (NGR) X:	Coordinates (NGR) Y:	Level (top):
		Depth: 20.20 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
801301	Soft brown slightly sandy slightly gravelly CLAY with rootlets. Gravel is angular to rounded fine to coarse. Occasional CBM noted, not retained. Sand is fine to medium.	Made Ground	0.00–-0.03		
801302	Soft orangish brown slightly sandy slightly gravelly CLAY. Gravel is angular to sub-rounded fine to coarse of chert, chalk. Occasional CBM noted, not retained. Sand is fine to medium.	Made Ground	0.30–0.70		
801303	Soft greyish brown slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is angular to rounded fine to coarse of chert and chalk.	River Terrace Deposits	0.70–3.10		
801304	Soft grey slightly sandy gravelly CLAY. Sand is fine. Gravel is angular to rounded fine to coarse chalk.	River Terrace Deposits	3.10–4.10		
801305	Soft to firm grey mottled brown sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is sub-angular to rounded fine to coarse chert.	River Terrace Deposits	4.10–4.90		
801306	Firm to stiff grey slightly sandy silty CLAY with rare shell fragments. Sand is fine.	Bedrock	4.90–20.20+		

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2K5501SR (WA8014)
Coordinates (NGR) X: 453971.40	Coordinates (NGR) Y: 115639.90	Level (top): 23.16 m OD
		Depth: 10.90 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
801401	Soft, dark brown slightly sandy CLAY. Moderate to common fine to medium roots. Sand is fine to medium.	Topsoil	0.00–0.10	23.16–23.06	
801402	Soft, pale grey slightly sandy CLAY with subangular to subrounded cobbles sized nodular flint with cortex, bluish and whitish patina. Sand is fine to medium. Common fine roots. Dark reddish-brown stains along root channels ?iron staining.	River Terrace Deposits	0.10–-0.27	23.06–22.89	
801403	Soft yellowish brown to orangish brown (locally pale grey) slightly sandy CLAY with subangular to subrounded cobble sized flint (with cortex). Sand is fine to medium. Occasional fine roots.	River Terrace Deposits	0.27–-0.50	22.89–22.66	
801404	Well compacted soft, yellowish brown (locally grey) sandy CLAY AND GRAVEL, with gravel being subangular to subrounded coarse gravel to cobble sized nodular flint with cortex. Becomes gravellier with depth. Pockets of grey very sandy clay 0.50-0.60. Occasional fine roots. Becomes greyer with depth, grey matrix by 1.	River Terrace Deposits	0.50–1.70	22.66–21.46	
801405	Firm yellowish brown (locally grey) slightly sandy CLAY. Rootlets present.	Bedrock	1.70–2.00	21.46–21.16	
801406	Stiff brownish grey silty CLAY. Occasional pockets of silt.	Bedrock	2.00–3.00	21.16–20.16	
801407	Firm light brown CLAY with pockets of reddish-brown silt.	Bedrock	3.00–4.20	20.16–19.36	
801408	Stiff bluish grey CLAY	Bedrock	4.20–10.90+	19.36–12.66+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2L6002SA (WA878)
Coordinates (NGR) X: 448996.44	Coordinates (NGR) Y: 120402.78	Level (top): 42.75 m OD
		Depth: 4.90 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
8781	Dark greyish brown sandy CLAY AND GRAVEL, with coarse components being fine gravel to cobble sized flint and chalk (subangular to subrounded), CBM, concrete, tarmac, charcoal, corrugated cement sheet (angular to very angular). Metal objects seen. Corrugated cement sheet possible ACM.	Made ground	0.00–0.30	42.75–42.45	
8782	Soft mid orangish brown mottled orange silty CLAY with. rare rooting. Frequent coarse sand sized chalk inclusions (≤3mm). Frequent coarse components of brick and mortar (≤2mm).	Slope Deposits	0.30–0.60	42.45–42.15	
8783	Similar to (8782) (soft mid orangey brown mottled orange silty CLAY with rare rooting and common coarse sand sized chalk) but no brick and mortar.	Slope Deposits	0.60–2.50	42.15–40.25	
8784	Identical to (8783), but very stiff. Cannot be crumbled or easily rolled into a shape.	Bedrock.	2.50–3.50	40.25–39.25	
8785	Identical to (8784)but very stiff to hard. Very cold fingers cannot break chunks of it. Occasional streaks of siltstone. Flint inclusion (2cm) at 4.40m.	Bedrock	3.50–4.45	39.25–38.30	
8786	Hard dark grey sandy CLAY. Very solid and difficult to break.	Bedrock	4.45–4.90+	38.30–37.85+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2L6011SR (WA8023)
Coordinates (NGR) X: 447176.00	Coordinates (NGR) Y: 121476.10	Level (top): 21.35 m OD
		Depth: 4.00 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
802301	Soft, brown to greyish brown slightly sandy slightly gravelly CLAY. Gravels of flint (uncommon fine gravel to coarse gravel sized, subrounded to subangular). Reddish brown stains along root channels ?iron staining.	Topsoil.	0.00–0.50	21.35–20.85	
802302	Soft well compacted yellowish brown marbled orangish brown slightly sandy CLAY. Gravel is flint (Common to abundant, fine gravel to cobble sized ≤90x70x30 mm, subrounded to subangular, rolled, cortex present). Manganese stains around some flint surfaces and discrete in ped replacement to 3 mm (rare).	River Terrace Deposits	0.50–0.80	20.85–20.55	
802303	Very compact brown marbled orangish brown slightly sandy CLAY AND GRAVELS. Gravel is flint (abundant, angular to subrounded coarse gravel to medium cobble sized). Trending fine to coarse gravel sized, cobbles common.	River Terrace Deposits	0.80–1.90	20.55–19.45	
802304	Firm brown and yellowish brown slightly sandy slightly gravelly CLAY. Gravel is flint (fine gravel to coarse gravel sized, moderate to common). Sand is fine to medium.	River Terrace Deposits	1.90–2.40	19.45–18.95	
802305	Stiff brown to greyish brown slightly sandy CLAY.	Bedrock	2.00–4.00+	18.95–16.95+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2M6507SA (WA8025)
Coordinates (NGR) X: 446510.00	Coordinates (NGR) Y: 123140.00	Level (top): 23.25 m OD
		Depth: 13.50 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
802501	Soft-slightly firm yellowish brown slightly gravelly/cobbly sandy CLAY. Moderate fine and. medium roots. Gravels/cobbles of flint (Rare to sparse; ≤110x80x40 mm; sub-angular to sub-rounded). Fine and medium sand. Clear contact.	Topsoil	0.00–0.30	23.25–22.95	
802502	Firm orangish brown sandy CLAY with pockets of clayey SAND. Rare fine roots. Fine and medium angular to sub-angular flint gravels start to occur as a sparse to occasional inclusion below 1.20 m bgl (rare 0.30-1.20 m bgl). Fine and medium quartz-derived sand.	Alluvium	0.30–1.90	22.95–21.35	
802503	Firm, sticky, orangish brown gravelly sandy CLAY. Fine-coarse gravels of flint (≤90x50x35 mm; rounded to angular, nodular pieces noted). Fine and medium quartz-derived sand.	River Terrace Deposits	1.90–3.00	21.35–20.25	
802504	Orangish brown, slightly gravelly clayey SAND. Fine and medium rounded to very angular flint gravels. Fine, medium and coarse quartz-derived sand. Pockets of dark grey clay noted. Some darker flecking in sands and fine gravels may indicate feldspars. Conglomerate (iron rich) also noted as an inclusion.	Bedrock.	3.00–5.70+	20.25–17.55+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2M6508SA* (WA8026)
Coordinates (NGR) X: 446510.00	Coordinates (NGR) Y: 123140.00	Level (top): 23.25 m OD
		Depth: 7.40 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
802601	Soft dark brown slightly sandy CLAY under turf with frequent grass rootlets. Sand component is fine.	Topsoil	0.00–0.10	23.25–23.15	
802602	Soft dark brown slightly sandy CLAY with common grass rootlets.	Subsoil	0.10–0.15	23.15–23.10	
802603	Soft to firm orangish brown gravelly sandy CLAY. Gravel is subangular to subrounded fine gravel to coarse gravel sized chert and chalk. Gravel trends fine gravel sized.	Alluvium	1.50–2.50	23.10–20.75	
802604	Moderately dense orangey brown clayish SAND AND GRAVEL. Gravel is subangular to well-rounded fine gravel to coarse gravel sized chert. Gravel becomes more rounded after 3.50m.	River Terrace Deposits	2.50–4.00	20.75–19.25	
802605	Moderately dense brown CLAY AND GRAVEL, with gravel being subangular to rounded fine gravel to coarse gravel sized chert and chalk. Becoming increasingly white and chalk dominated after 4.00m.	River Terrace Deposits	4.00–4.50	19.25–18.75	
802606	Off-white silty chalk GRAVEL.	Bedrock	4.50–7.40+	18.75–15.85+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: BH506 (WA9506)
Coordinates (NGR) X: 446,175.47	Coordinates (NGR) Y: 122,125.70	Level (top): 22.67 m OD
		Depth: 55.70 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
950601	Loose mid brown CLAY. Rootlets present.	Topsoil	0.00-0.40	22.67–22.27	
950602	Light brown to mid brown CLAY, becoming grey with depth. Very occasional sand and medium gravel clasts. Gravel is flint subrounded	Slope Deposits	0.40-0.80	22.27-21.87	
950603	Light brown clayey sandy GRAVEL. Gravel clasts fine to coarse, flint clasts angular to subangular. Occasional subrounded clasts. Sand fine to coarse. Gravel fine to coarse, to 40mm width. Less clayey and sandier with depth	River Terrace Deposits	0.80-1.30	21.87-21.37	
950604	Firm brown mottled orangish brown and grey silty CLAY. Gravel is subangular to rounded fine to medium chalk.	River Terrace Deposits	1.30-2.60	21.37-20.07	
950605	Stiff bluish grey slightly sandy CLAY.	Bedrock	2.60-10.00+	20.07-12.67+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: BHP01 (WA901)
Coordinates (NGR) X: 470,093.49	Coordinates (NGR) Y: 105,888.71	Level (top): 4.80 m OD
		Depth: 6.56 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
90101	Light brown slightly gravelly silty CLAY. Gravel is fine to coarse flint, sub-angular to rounded. Common rooting in top 0.10m, after which rooting frequent.	Topsoil	0.00–0.60	4.80–4.20	
90102	Dark yellowish brown slightly silty CLAY. Rare fine angular flint clasts. Structureless. Rooting rare. Grey mottling at 1.10-1.50m bgl	Clays	0.60–2.90	0.60–1.90	
90103	Light yellowish brown gravelly CLAY. Gravel is fine to coarse flint and chalk clasts. Chalk is sub-rounded; flint is angular to sub-angular.	Gravelly Clays	2.90–3.50	1.90–1.30	
90104	Greyish white gravelly CLAY. Gravel is fine to coarse sub-rounded to sub-angular chalk clasts.	Chalky Silts and Gravels	3.50–5.00	1.90–-0.02	
90105	Greyish white chalky gravelly sandy clayey SILT. Sand is medium to coarse chalk clasts. Gravel is fine to coarse sub-rounded chalk clasts with rare flint clasts	Chalky Silts and Gravels	5.00–6.56+	-0.02–-1.76+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: BHP02 (WA902)
Coordinates (NGR) X: 470,231.08	Coordinates (NGR) Y: 106,121.28	Level (top): 5.36 m OD
		Depth: 4.45 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
90201	Dark brown very slightly gravelly SILT. Structureless. Rooting common. Gravel clasts fine to medium sub-rounded chalk clasts. Gradual boundary.	Topsoil	0.00–0.40	4.45–4.05	
90202	Mid brown gravelly silty CLAY. Gravel is fine to coarse sub-angular to angular flint. Structureless. Slightly gravelly from 0.40-0.60m bgl.	Gravelly Clays	0.40–1.70	4.05–2.75	
90203	Yellowish brown firm silty gravelly CLAY. Gravel fine to coarse chalk and flint. Chalk sub-rounded, flint sub-angular. Gravel 80% chalk clasts. Structureless. Abrupt boundary	Gravels	1.70–3.40	2.75–1.05	
90204	Yellowish/brownish white chalky clayey GRAVEL. Gravel fine to coarse sub-rounded to sub-angular chalk clasts. Angular flint gravel clasts rare.	Chalky Silts and Gravels	3.40–3.80	1.05–0.65	
90205	Soft yellowish white chalky gravelly clayey SILT. Gravel is fine to coarse chalk clasts.	Chalky Silts and Gravels	3.80–4.45+	0.65–0.00+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: BHP05 (WA905)
Coordinates (NGR) X: 470,282.07	Coordinates (NGR) Y: 106,143.60	Level (top): 4.29 m OD
		Depth: 5.60 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
90501	Soft mid greyish brown slightly sandy slightly gravelly slightly clayey SILT with common modern fine roots and grass. Gravel is fine to medium (2-16mm) angular (30%) to subangular (70%) flint clasts. Moderately sorted and medium dense. Sharp lower boundary	Topsoil	0.00–0.10	4.29–4.19	
90502	Soft dark brown slightly gravelly slightly sandy slightly clayey SILT with common fine roots and few fragments of Victorian pottery and fine to medium (2-15mm) brick. Gravel is predominantly fine to medium (2-13mm) subangular flint with few chalk clasts. Brecciated material and moderately sorted. Lower boundary is unclear	Made ground	0.10–1.00	4.19–3.29	
90503	Soft mid greyish brown slightly sandy gravelly clayey SILT. Gravel is many fine subangular flint clasts and common medium to coarse (12-25mm) subangular (60%) to subrounded (40%) flint clasts. No brick or modern fragments. Lower boundary is unclear	Gravelly Clays	1.00–2.20	3.29–2.09	
90504	Firm to stiff dark reddish brown mottled bluish grey slightly gravelly slightly sandy very silty CLAY. Gravel is common predominantly fine (<5mm) subangular flint and chalk clasts with few medium (<15mm) subrounded flint clasts. Lower boundary is unclear	Gravelly Clays	2.20–2.70	2.09–1.59	

90505	Firm mid reddish brown mottled bluish grey slightly gravelly sandy silty CLAY. Gravel is few fine (<4mm) subrounded flint clasts. Moderately well sorted. Lower boundary is unclear	Gravelly Clays	2.70–3.40	1.59–0.89	
90506	Soft light grey mottled cream becoming light yellowish brown very gravelly silty CLAY. Gravel is many fine (<5mm) with few medium (<14mm) subangular (70%) to subrounded (30%) chalk clasts. Few coarse (<45mm) subangular flint gravel clasts. Poorly sorted. Lower boundary is unclear	Chalky Silts and Gravels	3.40–4.80	0.89–-0.51	101, 102, 103
90507	Light yellowish brown mottled cream silty very clayey GRAVEL. Gravel is fine to coarse (2-25mm) subangular (80%) to subrounded (20%) chalk clasts and few flint clasts. Few cobble-sized (<70mm) subangular flint clasts. Very saturated with water.	Chalky Silts and Gravels	4.80–5.40	-0.51–-1.11	104
90508	Light cream sightly silty GRAVEL. Gravel is fine to coarse (2-24mm) subangular (90%) to subrounded (10%) chalk clasts. Saturated with water.	Chalky Silts and Gravels	5.40–-5.60+	-1.11–-1.31+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: BHP06 (WA906)
Coordinates (NGR) X: 470,345.00	Coordinates (NGR) Y: 106,203.41	Level (top): 3.91 m OD
		Depth: 7.30 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
90601	Soft brecciated slightly sandy slightly gravelly SILT. Sand is fine to medium. Gravel is fine to medium (2-13mm) subangular flint clasts. Frequent fine modern rooting and grass. Sharp lower boundary	Topsoil	0.00–0.20	3.91–3.71	
90602	Soft brecciated slightly sandy slightly gravelly clayey SILT. Sand is fine to medium. Gravel is fine to medium (2-13mm) subangular flint and chalk clasts. Few fragments of medium (<10mm) reddish brick. Lower boundary is unclear	Made ground	0.20–1.00	3.71–2.91	
90603	Light cream yellowish brown very clayey sandy GRAVEL. Sand is fine to coarse. Gravel is fine (<6mm) with few coarse (<35mm) subangular chalk (30%) and flint (70%) clasts. Moderately sorted and loose. Lower boundary is unclear	Possible Slope Deposits	1.00–1.50	2.91–2.41	
90604	Whitish brown grey and yellowish-brown sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse (2-32mm) subangular (75%) to subrounded (25%) flint clasts with few cobble-sized (<70mm) angular flint clasts. Poorly sorted and loose. Lower boundary is unclear	Possible Slope Deposits	1.50–2.60	2.41–1.31	
90605	Light creamish yellowish brown very sandy GRAVEL. Sand is fine to coarse. Gravel is fine (<5mm) with occasional medium to coarse (12-34mm) subangular (60%) to subrounded (40%) flint clasts and few chalk clasts. Becomes slightly sandier with no medium to coarse clasts at 3.60m. Lower boundary is unclear	Possible Slope Deposits	2.60–3.60	1.31–0.31	

90606	Light creamish yellowish brown slightly clayey sandy GRAVEL with common coarse pockets of sandy very clayey silt. Sand is fine to coarse. Gravel is fine to coarse (2-36mm) subangular (70%) to subrounded (20%) and few well rounded (10%) flint clasts. Poorly sorted and loose. Lower boundary is unclear	Possible Slope Deposits	3.60–4.40	0.31–-0.49	
90607	Light cream greyish brown slightly clayey sandy very silty GRAVEL. Sand is fine to medium. Gravel is fine to medium (2-12mm) subangular flint chalk clasts and fine (<5mm) subangular (40%) to subrounded (60%) chalk clasts. Moderately to poorly sorted Lower boundary is unclear	Possible Slope Deposits	4.40–5.70	-0.49–-1.79	
90608	Light creamish yellowish greyish brown slightly sandy silty GRAVEL. Sand is fine. Gravel is fine to coarse (2-36mm) subangular (70%) to subrounded (30%) chalk and flint clasts. Lower boundary is unclear	Possible Slope Deposits	5.70–6.20	-1.79–-2.29	
90609	Light creamish yellowish greyish brown slightly sandy clayey gravelly SILT. Sand is fine to medium. Gravel is fine to medium (2-9mm) subangular (60%) to subrounded (40%) chalk clasts with few coarse (<18mm) subangular chalk clasts.	Possible Slope Deposits	6.20–7.30	-2.29–-3.39	
90610	Light cream slightly yellowish brown slightly sandy silty GRAVEL. Sand is fine to coarse. Gravel is fine to coarse with few cobble-sized (2-75mm) subangular chalk clasts. Few coarse to cobble-sized (28-65mm) angular and nodular flint clasts.	Possible Slope Deposits	7.30+	-3.39+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Test Pit ID: TPP01 (WA1)
Coordinates (NGR) X: 470,111.37	Coordinates (NGR) Y: 105,888.44	Level (top): 4.23 m OD
Length: 3.00 m	Width: 0.65 m	Depth: 4.00 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
101	Brown friable clayey TOPSOIL moderately rooted Structureless sub-horizontal contact with	Made Ground	0.00–0.30	4.23–3.93	
102	Firm to very firm mottled grey mid brown silty CLAY. occasional flint clasts, no sorting, angular. up to 50mm. Becoming gravelly from 1.80 m. mixture of clast size, generally 20-40mm sub angular and sub rounded. no obvious sorting, Structureless well consolidated	Gravelly clay	0.30–2.50	3.93–2.98	
103	Very firm to very stiff dark brown and grey CLAY with flint clasts and chalky fragments	Chalky Silts and Gravels	2.50–4.00+	2.98–0.23+	

Site Code: **271400**	**Site Name:** **Hampshire Water Transfer and Water Recycling Project**	**Test Pit ID:** **TPP02 (WA2)**
Coordinates (NGR) X: **470,115.68**	**Coordinates (NGR) Y:** **106,009.95**	**Level (top):** **6.40 m OD**
Length: **3.00 m**	**Width:** **0.65 m**	**Depth:** **4.00 m**

Context Number	**Description**	**Interpretation**	**Depth m BGL**	**Depth m aOD**	**Samples**
201	Brown rooted friable CLAY. Structureless, poorly consolidated Clear sub horizontal contact.	Topsoil	0.00–0.30	6.40–6.10	
202	Firm, well compacted yellowish brown slightly gravelly sandy SILT.	Gravelly clay	0.30–4.00+	6.10–4.40+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Hand Dug Pit ID: 3E3111HP (WA3111)
Coordinates (NGR) X: 463,137.80	Coordinates (NGR) Y: 107,419.90	Level (top): 59.83 m OD
Length: 0.30 m	Width: 0.30 m	Depth: 1.20 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
311101	Dark brown silty CLAY with occasional subangular flint.	Topsoil	0.00-0.30	59.83-59.53	
311102	Light orangish brown silty CLAY with rare subangular flint inclusions, 2-5cm in size.	Slope Deposits	0.30-0.65	59.53-59.18	
311103	Light orangish brown silty CLAY with frequent subangular flint inclusions. 2-5cm in size.	Slope Deposits	0.65-1.20+	59.18-58.63+	

Site Code: 271400	**Site Name:** Hampshire Water Transfer and Water Recycling Project	**Hand Dug Pit ID:** 3H4514HP (WA4514)
Coordinates (NGR) X: 456,999.76	**Coordinates (NGR) Y:** 113,116.13	**Level (top):** 47.35 m OD
Length: 0.30 m	**Width:** 0.30 m	**Depth:** 1.20 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
451401	Dark brown firm coarse grained sandy CLAY, heavily rooted.	Topsoil	0.00-0.10	47.35-47.25	
451402	Dark brown mouldable medium grained sandy CLAY, frequent sub-rounded flint gravel up to 2cm in length, one flat sub-rounded flint up to 6cm in length, rooted.	Slope Deposits	0.10-0.30	47.25-47.05	
451403	Light brown medium grained sandy CLAY with frequent dark grey mottles, frequent sub-rounded flint gravel up to 2cm in length, water encountered at 0.60m, deposit appears to be the same except wet.	Slope Deposits	0.30-1.20+	47.05-46.15+	

Site Code: 271400	**Site Name:** Hampshire Water Transfer and Water Recycling Project	**Hand dug Pit ID:** 3J5024HP (WA5024)
Coordinates (NGR) X: 454,382.11	**Coordinates (NGR) Y:** 115,259.04	**Level (top):** 34.90 m OD
Length: 0.30 m	**Width:** 0.30 m	**Depth:** 1.20 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
502401	Fine to medium grained slightly sandy CLAY, rare sub-angular flint primarily 1cm in size.	Topsoil	0.00-0.30	34.90-34.60	
502402	Fine to medium grained slightly sandy CLAY, rare sub-angular flint primarily 1cm in size, one large flat sub-angular flint measuring 7cm, does not appear worked.	Possible Slope Deposits	0.30-0.50	34.60-34.40	
502403	Very light orange CLAY, as above.	Possible Slope Deposits	0.50-1.20+	34.40-33.70+	

Site Code: 271400	**Site Name:** Hampshire Water Transfer and Water Recycling Project	**Borehole ID:** 3K5511DS (WA5511)
Coordinates (NGR) X: 453,480.00	**Coordinates (NGR) Y:** 117,568.00	**Level (top):** 36.00 m OD
		Depth: 6.45 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
551101	Greenish grey silty CLAY with frequent glass and brick fragments	Made Ground	0.00-1.70	36.00-34.30	
551102	Stiff grey CLAY with orange mottling	Bedrock	1.70-6.00+	34.30-30.00+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 3F3523DR (WA3523)
Coordinates (NGR) X: 458,254.82	Coordinates (NGR) Y: 109,016.76	Level (top): 19.52 m OD
		Depth: 1.20 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
352301	Mid yellow brown medium grained sandy CLAY with frequent gravel, becoming more common with depth. gravel is subangular with rare subrounded piece. 10% 5-8cm, 80% 1-5cm, 10% under 1cm.	Slope Deposits	0.00-1.20+	19.52-18.32+	

Site Code: 271400	**Site Name:** Hampshire Water Transfer and Water Recycling Project	**Hand Dug Pit ID:** 3F3602HP (WA3602)
Coordinates (NGR) X: 458,309.74	**Coordinates (NGR) Y:** 108,898.55	**Level (top):** 29.52 m OD
Length: 0.30 m	**Width:** 0.30 m	**Depth:** 1.20 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
360201	Dark brown silty CLAY. Rare subangular flints 2-5cm in size, rare smears of chalk, very rare subrounded chalk.	Topsoil	0.00-0.30	29.52-29.22	
360202	Mid orang brown silty CLAY with rare subangular flints 2-8cm in size. At 0.80mbgl starts to become stiffer with depth.	Slope Deposits	0.30-0.85	29.22-28.67	
360203	Stiff chalky CLAYS and GRAVEL. Gravel is 5cm subangular flints. Hand dug pit halted at 0.90 m bgl, due to stiffness of clay breaking the tools.	Slope Deposits	0.85-1.20+	28.67-28.32+	

Site Code: 271400	**Site Name:** Hampshire Water Transfer and Water Recycling Project	**Borehole ID:** 3F7509IT (WA7509)
Coordinates (NGR) X: 458,294.00	**Coordinates (NGR) Y:** 109,004.00	**Level (top):** 17.20 m OD
Length: 3.00 m	**Width:** 0.65 m	**Depth:** 2.50 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
750901	Dark greyish brown silty CLAY with common subangular and rare subrounded flints, 1cm in size. Rare 8cm subangular flints.	Topsoil	0.00–0.20	17.20–17.00	
750902	Stiff silty light yellowish brown gravelly CLAY. Gravel is frequent subangular flints, 70% under 1cm in size, 10% 1-5cm, 10% 5-10cm, 10% 5-10cm.	Slope Deposits	0.20–0.60	17.00–16.60	
750903	Stiff dark slightly greyish brown gravelly CLAY. Becomes less gravelly with depth. Gravel is subangular flint, 80% 15-20cm, 20% 5-10cm.	Slope Deposits	0.60–2.50+	16.60–14.70+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 3F7510IT (WA7510)
Coordinates (NGR) X: 458,252.33	Coordinates (NGR) Y: 109,024.69	Level (top): 18.14 m OD
Length: 3.00 m	Width: 0.65 m	Depth: 2.50 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
751001	Dark greyish brown silty CLAY with common subangular and rare subrounded flints, 1cm in size. Rare 8cm subangular flints.	Topsoil	0.00–0.20	18.14–17.94	
751002	Firm silty greyish silty CLAY with frequent subangular flint, 15-20cm in size.	Slope Deposits	0.20–0.90	17.94–17.24	
751003	Stiff silty light greyish brown gravelly CLAY. Gravel is frequent subangular flints, 70% under 1cm in size, 10% 1-5cm, 10% 5-10cm, 10% 5-10cm.	Slope Deposits	0.90–2.50+	17.24–15.64+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 3F7512IT (WA7512)
Coordinates (NGR) X: 458,229.02	Coordinates (NGR) Y: 109,027.71	Level (top): 20.40 m OD
Length: 3.00 m	Width: 0.65 m	Depth: 2.50 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
751201	Dark greyish brown silty CLAY with common subangular and rare subrounded flints, 1cm in size. Rare 8cm subangular flints.	Topsoil	0.00–0.20	20.40–20.20	
751202	Dark greyish brown silty CLAY. Very rare subangular flint boulders up to 27cm in size.	Slope Deposits	0.20–0.90	20.20–19.30	
751203	Off white silty chalky CLAY with rare subangular flints up to 20cm in size. Chalk is not tabular and mixed with the clay.	Slope Deposits	0.90–2.50+	19.30–17.90+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 3F7513IT (WA7513)
Coordinates (NGR) X: 458,271.00	Coordinates (NGR) Y: 108,984.98	Level (top): 18.47 m OD
Length: 3.00 m	Width: 0.65 m	Depth: 2.50 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
751301	Dark greyish brown silty CLAY with common subangular and rare subrounded flints, 1cm in size. Rare 8cm subangular flints.	Topsoil	0.00-0.20	18.47–18.27	
751302	Stiff mid orange yellow brown silty CLAY. Frequent subangular flints 1cm in size with rare chalk smears and gravel.	Slope Deposits	0.20-1.00	18.27–17.47	
751303	Off white silty chalky CLAY with rare subangular 20cm flint. Chalk is subangular to subrounded.	Slope Deposits	1.00-2.70	17.47–15.77	
751304	Subangular to tabular CHALK GRAVEL with rare flint boulders up to 20cm in size.	Bedrock	2.70-3.00+	15.77-15.47+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 3H4600SA (WA4600)
Coordinates (NGR) X: 456,776.00	Coordinates (NGR) Y: 112,112.58	Level (top): 54.21
		Depth: 1.20 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
460001	Light greyish brown sandy CLAY with frequent subangular (90%) to subrounded (10%) flints, 1-4cm in size	Topsoil	0.00–0.50	54.21–53.71	
460002	Light greyish brown medium grained sandy gravelly CLAY. rare light orangish brown mottles of sand. gravel is 80% less than 1cm in size 20% 1-5cm. subangular. very rare crushed chalk.	River Terrace Deposits	0.50–0.80	53.71–53.41	
460003	Clayey GRAVEL. gravel is same as above. Gravel is 80% less than 1cm in size 20% 1-5cm. subangular. very rare crushed chalk.	River Terrace Deposits	0.80–1.20+	53.41–53.01+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Hand Dug Pit ID: 3J5017HP (WA5017)
Coordinates (NGR) X: 455,370.98	Coordinates (NGR) Y: 114,971.01	Level (top): 53.40 m OD
Length: 0.30 m	Width: 0.30 m	Depth: 1.20 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
501701	Moderately soft greyish brown gravelly SILT. Gravel is medium to coarse, sub-angular to rounded. Rooting frequent. Structureless. Gradual to 501702.	Topsoil	0.00–0.45	53.40–52.95	
501702	Firm, well compacted yellowish brown slightly gravelly sandy SILT. Sand is medium. Gravel is medium sub-rounded to rounded flint. Structureless. Occasional reddish mottling. Gradual to 501703	Bedrock	0.45–0.90	52.95–52.05	
501703	Firm, well compacted yellowish brown to grey silty CLAY. Structureless	Bedrock	0.90–1.20+	52.05–51.74+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 3W8534DS (WA8534)
Coordinates (NGR) X: 456,298.00	Coordinates (NGR) Y: 111,487.00	Level (top): 53.14
		Depth: 1.20 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
853401	Dark greyish brown silty CLAY with moderate-fine rooting. Moderate compaction. Common sub-rounded stones ≤40mm. Sharp lower contact.	Topsoil	0.00–0.20	53.14–52.94	
853402	Mid to light greyish brown CLAY with occasional gravel inclusions. Mottled and fairly tightly compacted. CBM and concrete fragments observed some of which were fairly large in size ~100mm.	Made Ground	0.20–2.20	52.20–50.20+	
853403	Light brown sandy GRAVEL. Sib-angular fine to coarse flint clasts.	River Terrace Deposits	2.20–3.15	50.20–49.25	
853404	Reddish brown slightly gravelly SAND. Sub-angular flint clasts.	Possible River Terrace Deposits	3.15–4.00+	49.25–48.40+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 3W8535SA (WA8535)
Coordinates (NGR) X: 456,844.00	Coordinates (NGR) Y: 110,705.88	Level (top): 21.92 m OD
		Depth: 4.00 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
853501	Moderately soft low compaction mid brown slightly gravelly SILT. Gravel is fine to coarse subrounded to subangular flint. Rooting frequent. Gradual to 853502	Topsoil	0.00-0.45	21.92-21.47	
853502	Moderately soft well compacted greyish brown SILT. Structureless. Rooting rare. Sharp to 853503	Possible River Terrace Deposits	0.45-1.00	21.47-20.92	
853503	Moderately firm well compacted very clayey GRAVEL. Gravel is fine (40%), medium (40%) to coarse (20%), angular (30%), subangular (50%) to subrounded (20%) flint. Low sphericity. Matrix supported. Moderately poorly sorted.	Possible River Terrace Deposits	1.00-1.70	20.92-20.22	
853504	Firm well compacted greyish brown slightly gravelly sandy CLAY. Sand is fine. Gravel is fine subrounded flint. Rare fine organic woody material Structureless. Becomes dark grey with depth.	Bedrock	1.70-4.00+	20.22-17.92+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Hand Dug Pit ID: 3W8538HP (WA8538)
Coordinates (NGR) X: 456,490.00	Coordinates (NGR) Y: 111,275.00	Level (top): 49.70 m OD
Length: 0.30 m	Width: 0.30 m	Depth: 0.70 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
853801	Topsoil / turf. dark greyish brown silty clay loam with moderate fine rooting. moderate compaction. common sub-rounded stones ≤40mm. Clear horizon	Topsoil	0.00–0.40	49.70–49.30	
853802	Mid greyish brown with yellowish hue, gravelly silty sandy CLAY. abundant gravel and chert. loose compaction. clear horizon above.	River Terrace Deposits	0.40–1.20+	49.20–48.50+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 3W8539DS (WA8539)
Coordinates (NGR) X: 456,294.00	Coordinates (NGR) Y: 111,471.00	Level (top): 37.56 m OD
		Depth: 1.20 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
853901	Topsoil / turf. dark greyish brown silty CLAY with moderate fine rooting. moderate compaction. common sub-rounded stones ≤40mm. observed two golf balls within turf. Clear contact.	Topsoil	0.00–0.20	37.56–37.36	
853902	Mid greyish brown with yellowish hue, silty sandy CLAY. fairly compact. common to very common sub-rounded gravels ≤60mm. occasional clayey lenses and fine rooting. sparse CBM (brick, clay pipe, concrete, tarmac) observed throughout. Clear contact.	Made Ground	0.20–0.85	37.36–36.71	
853903	Tarmac. Blackish grey layer	Made Ground	0.85–1.00	36.71–36.56	
853904	Mid to dark grey sandy GRAVEL with some silt. common to very common gravel, compact. rare CBM observed.	Made Ground	1.00–1.20	36.56–36.36	
853905	Sandy clayey GRAVEL. Fine to coarse sub-angular flint clasts.	River Terrace Deposits	1.20–2.00+	36.36–35.56+	

Appendix 4 Combined Archaeological and Geoarchaeological monitoring

The stratigraphic succession encountered in each borehole are outlined below. Both heights and coordinates were taken at the centre of each trench. Depth bgl = below ground level.

BH108 (WA8108)	**Length 0.30 m**	**Width 0.30 m**	**Depth 1.20 m**
Easting 471870.70	**Northing 108771.50**	**m OD 15.84**	

Context Number	**Fill Of/Filled With**	**Interpretative Category**	**Description**	**Depth BGL**
810801		Topsoil	Soft mid yellowish brown slightly gravelly sandy silty CLAY with frequent fine roots and grass turf cover. Becomes slightly darker at 0.30 m bgl. Gravel is flint, moderately common to common; subangular to sub-rounded, mostly coarse gravel sized with sparse medium gravel and rare cobbles. Sand is fine to very fine. Gradual contact with (810802).	0.00–0.30
810802		Subsoil	Soft mid to pale yellowish brown slightly gravelly sandy silty CLAY with increasing sand and clay content with depth. Gravel is flint, moderately common to common; subangular to subrounded; ≤73 mm, mostly coarse gravels with few medium gravels and rare small cobbles. Sand is fine to very fine. Gradual contact with (810803).	0.30–0.55
810803		Slope Deposits	Soft mid to pale brown mottled orange slightly gravelly sandy CLAY. Gravel is flint, moderately common to common; subangular to subrounded; ≤60 mm, mostly coarse gravel and medium gravel sized with sparse fine gravels. Sand is fine to very fine. Gradual contact with (810804).	0.55–0.80
810804		Slope Deposits	Soft mid to pale brown mottled orange slightly gravelly clayey SAND. Gravel is flint, moderately common to common; subangular to subrounded; ≤60 mm, predominantly coarse and medium gravels with few fine gravels. Sand is fine to very fine.	0.80–1.20+

BH109 (WA8109)	Length 0.30 m	Width 0.30 m	Depth 1.20 m
Easting 471870.70	Northing 108771.50	m OD 15.84	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
810901		Topsoil	Yellowish brown to brown slightly sandy silty CLAY, sand is fine to medium. Grassed turf cover. No seen coarse components.	0.00– 0.10
810902		Made Ground	Soft to firm pale yellowish brown slightly sandy silty CLAY, sand is fine to medium, quartz derived. Slag present immediately below 10901. Land drain at 0.40 m bgl, redundant, filled with roots / silted. New intervention moved to immediate west of previous.	0.10–0.50
810903		Slope Deposits	Soft to firm yellowish brown slightly sandy silty CLAY. Sparse angular to sub-angular flint gravel appearing at 0.6, fine gravel to gravel sized.	0.50–0.70
810904		Slope Deposits	Firm light neutral grey mottled yellowish brown slightly sandy CLAY with no seen coarse components. Iron and manganese staining seen throughout.	0.70–0.90
810905		Slope Deposits	Light neutral grey mottled yellowish brown slightly sandy CLAY with few fine gravel sized sub-angular to sub-rounded flints. Iron and manganese staining seen throughout. Frequent pockets of unconsolidated sand sized chalk. Sand is fine.	0.90– 1.20+

BH301 (WA8301)	Length 0.40 m	Width 0.40 m	Depth 1.30 m
Easting 468111.84	Northing 106302.61	m OD 64.34	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
30101		Topsoil	Well consolidated dark greyish brown silty CLAY with uncommon sub-angular to sub-rounded flint and chalk gravel of fine gravel to gravel size. Common rooting. Clear boundary with (30102).	0.00–0.15
30102		Made Ground	Well consolidated mid greyish brown silty CLAY with very common sub-angular to sub-rounded chalk with occasional flint. Flint is less abundant than chalk and trends sub-angular .	0.15–0.40
30103		Made Ground	Light yellowish brownish grey SAND with few angular sandstone boulders (300mm). Sand is fine to medium and well sorted.	0.40–0.60
30104		Slope Deposits	Well consolidated pale greyish brown gravelly SILT (CHALK). Gravel is sub-angular to sub-rounded weak chalk and stiff flint of fine gravel to coarse gravel size.	0.60–0.75
30105		Bedrock	White greyish chalk recovered as silty GRAVEL. Gravel is sub-angular to sub-rounded fine to coarse.	0.75–1.30+

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: BH302 (WA8302)
Coordinates (NGR) X: 466952.10	Coordinates (NGR) Y: 106020.80	Level (top): 64.34 m OD
		Depth: 5.00 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
830201	Dark yellowish brown slightly sandy slightly gravelly silty CLAY. Gravel is sub-angular flint and chalk, fine to small cobble size.	Topsoil	0.00–0.15	64.34–64.19	
830202	Light brown gravelly SILT. Gravel is angular to sub-round flint and chalk	Slope Deposits	0.15–0.95	64.19–63.39	
830203	Mid grey sub-angular to subrounded chalk gravel.	Slope Deposits	0.95–1.20	63.39–63.14	
830204	CHALK. Very compact with large flint nodules.	Bedrock	1.20–5.00+	63.14–59.34+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: BH303 (WA8303)
Coordinates (NGR) X: 466633.40	Coordinates (NGR) Y: 106625.00	Level (top): 69.17 m OD
		Depth: 5.00 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
830301	Dark yellowish brown to dark greyish brown slightly gravelly slightly sandy silty CLAY. Gravel is sub-angular stiff flint and weak chalk, fine gravel to small cobble size. Flint frequently plough damaged (shattered nodule). Boundary with (30302) slightly undulate - probable effect of plough scarring.	Topsoil	0.00–0.30	69.17–68.87	
830302	Mid to dark yellowish brown slightly gravelly slightly sandy silty CLAY with somewhat common to common sub-angular to sub-rounded stiff flint and weak chalk gravel, trending fine gravel to coarse gravel sized with few small cobble sized flints. Chalk trends smaller than flint (trending fine gravel). Flints have off-white to blue cortexes. Rare charcoal inclusions at boundary with (30301), likely derived from (30301).	Slope Deposits	0.30–1.20	68.87–67.97	
830303	Mid brown sandy gravelly CLAY. Gravel angular to round flint and chalk.	Slope Deposit	1.20–2.90	67.97–66.27	
830304	CHALK with rare, fractured flint clasts.	Bedrock	2.90–4.20+	66.27–65.97+	

TP304 (WA304)	Length 2.30 m	Width 0.80 m	Depth 3.60 m
Easting 466618.00	Northing 106642.00	m OD 69.63	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
30401		Topsoil	Compact very soft mid greyish brown silty CLAY with common angular to sub-angular , fine gravel to coarse gravel sized flint and chalk. Common fine rooting. Sharp boundary with (30402).	0.00–0.30
30402		Subsoil	Friable mid greyish brown CLAY with very angular to angular weak weathered chalk and few sub-angular to sub-rounded flints at the interface with (30403). Rare fine rooting. Sharp boundary with (30403).	0.30–0.40
30403		Bedrock	Friable silty clayish GRAVEL with gravel being fine gravel to cobble sized very angular to sub-angular weak weathered chalk with uncommon stiff flint nodules of boulder size ≤(300mm). Becoming stiff by 0.80m	0.40–3.60+

TP305 (WA305)	Length 2.40 m	Width 0.90 m	Depth 3.00 m
Easting 466628.00	Northing 106635.00	m OD 69.63	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
30501		Topsoil	Soft to firm mid greyish brown CLAY with uncommon to common, very angular to sub-angular , fine gravel to coarse gravel sized weak chalk with few angular to sub-angular flints. Rare fine rooting. Chalk gravel more abundant at boundary with (30502). No topsoil in intervention due to area being stripped previous.	0.00–0.20
30502		Bedrock	Bedrock. Clast supported off-white silty clayish GRAVEL, with gravel being very angular to sub-angular , fine gravel to large cobble sized chalk with rare angular boulders of flint. Becomes stiffer from 2.	0.20–3.00+

TP306 (WA306)	Length 2.40 m	Width 0.90 m	Depth 3.15 m
Easting 466618.20	Northing 105528.12	m OD 69.63	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
30601		Topsoil	Soft moderately compacted mid greyish brown silty CLAY with common angular to sub-angular , fine gravel to coarse gravel sized weak chalk and flint. Common fine rooting. Clear boundary with (30602).	0.00–0.30
30602		Subsoil	Friable soft mid greyish brown CLAY with common angular to sub-angular , fine gravel to coarse gravel sized chalk and flint. Chalk more abundant than flint. Chalk more abundant at boundary with (30603). Rare fine rooting. Sharp boundary with (30603)	0.30–0.50
30603		Bedrock	Friable off-white clast supported silty clayey GRAVEL, with gravel being very angular to sub-angular fine gravel to cobble sized weak chalk degraded chalk. Few very angular to angular cobble to boulder (300mm) sized flints. Becoming stiff at 2, 10mm flint banding seen at 2.	0.50–3.20+

TP504 (WA504)	Length 3.80 m	Width 0.66 m	Depth 3.80 m
Easting 446215.00	Northing 121935.90	m OD 20.29	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
50401		Topsoil	Firm yellowish brown to brown (slight greyish tinge) slightly sandy CLAY with common sub-angular to sub-rounded fine gravel to coarse gravel sized flint. Clear boundary with (50402).	0.00–0.30
50402		Head-Brickearth Deposits	Reworked / bioturbated. Soft yellowish brown marbled reddish brown slightly sandy gravelly CLAY. Gravel is abundant, sub-angular to rounded trending fine gravel to coarse gravel sized flint with common cobble sized clasts. Iron and manganese staining seen on gravel and in matrix. Becomes more clast supported and denser with depth. Cut by [50403].	0.30–0.70
50403	50404, 50405	Land drain	Cut of land drain. East-west strike. Width=0.30 m, Depth=0.30 m.	0.30–0.60
50404	50403	Deliberate backfill	Fill of land drain. Chalk boulders. Max: 270x170x170 mm. Longest at 300 mm. Located in top of [50403] and stratigraphically below (50401); above (50405). Truncated by (50401).	0.30–0.50
50405	50403	Deliberate backfill	Fill of land drain. Firm pale greyish brown slightly sandy slightly gravelly CLAY.	0.50–0.60
50406		River Terrace Deposits	Pale grey marbled reddish-brown SANDY CLAY / CLAYISH SAND with pockets of flint gravel, with gravel being angular to rounded fine gravel to small cobble sized flint. Flints often exhibit rolled edges. Generally mixed appearance unlike other portions of this layer seen in TP's 505 and 506. Manganese and iron stains / mottles frequent. Sand is fine to coarse. Gradual contact with (50407).	0.70–1.10
50407		River Terrace Deposits	Pale greyish brown clast supported sandy clayish GRAVEL with gravel being angular to rounded fine gravel to cobble sized flint, with cobbles increasingly common after 0.8. Wetter from 0.9. Cobbles are often nodular.	1.10–1.50

50408		Bedrock	Firm to stiff mid neutral grey mottled orangey brown slightly sandy CLAY. Sand is fine.	1.50-3.80+

TP505 (WA505)	Length 4.30 m	Width 0.66 m	Depth 4.00 m
Easting 446204.70	Northing 121924.20	m OD 20.47	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
50501		Topsoil	Firm yellowish brown to brown (slight greyish tinge) slightly sandy gravelly CLAY. Gravels of flint (common, rounded to angular, ≤63 mm). Clear contact.	0.00–0.35
50502		Head-Brickearth Deposits	Yellowish brown and reddish brown slightly sandy gravelly cobbly CLAY. Gravels of flint (common to abundant; rounded to angular, ≤130 mm) with iron (haematite?) coatings and staining evident. Possible manganese stains present. Soil component slowly reduces and flint density increases with depth.	0.33–0.60
50505		River Terrace Deposits	In situ. Pale greyish brown sandy clayey GRAVELS of flint with cobbles increasingly present below 0.85 m bgl. Wetter from 0.90 m bgl. Cobbles mostly Rounded, sub-rounded and sub-angular, often nodular.	0.60–1.45
50506		Bedrock	Sandy CLAY.	1.45–4.00+

TP506 (WA506)	Length 3.10 m	Width 0.66 m	Depth 4.00 m
Easting 446213.69	Northing 121924.22	m OD 20.47	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
50601		Topsoil	Soft friable dark slightly greyish yellowish brown slightly sandy CLAY with common angular to sub-rounded fine gravel to gravel sized flint with uncommon cobble sized flint clasts.	0.00–0.35
50602		Head-Brickearth Deposits	Soft to firm yellowish brown marbled reddish brown slightly sandy CLAY AND GRAVEL. Gravel is angular to rounded fine gravel to cobble sized. Iron staining of clasts and matrix seen. Possible manganese staining. Becoming gravellier between 0.35 and 0.55m. Becoming paler and more clayish after 0.55. Bioturbated.	0.35–0.70
50603		River Terrace Deposits	Pale greyish brown and strong reddish brown sandy clayish GRAVEL, with gravel being angular to sub-rounded fine to coarse gravel sized flint. Gravel trends sub-rounded. Cobbles begin to appear below 0.9, increasing in abundance with depth. Water strike at 1.35m. Erosive contact.	0.70–1.40
50604		Bedrock	Stiff yellowish brown to brown (locally pale greyish brown) CLAY.	1.40–4.00+

TP507 (WA507)	Length 0.80 m	Width 0.66 m	Depth 4.00 m
Easting 446168.40	Northing 122320.22	m OD 25.76	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
50701		Topsoil	Plough soil. Under grass. Soft dark brown slightly sandy gravelly CLAY. Coarse gravels of flint (common, sub-rounded to sub-angular , fine gravel to coarse gravel sized) and chalk (uncommon to common, sub-angular to angular, ≤fine gravel to gravel sized). Thickest to east (downslope). Clear boundary with (50702).	0.00–0.20
50702		Subsoil	Soft greyish brown slightly sandy gravelly CLAY. Frequent medium to coarse gravels of flint and quartz (rounded to sub-angular, mostly rounded, ≤fine gravel to gravel sized) with sparse small and medium gravels of chalk (sub-rounded to angular, ≤fine gravel sized) mostly present in upper portion of layer. Thickest to west (upslope). Gradual contact with (50703).	0.20–0.40
50703		Head-Brickearth Deposits	Geology. Firm to stiff pale brown mottled pale orangish brown (looking pale yellowish brown en masse) slightly sandy gravelly CLAY. Sparse embedding of rounded gravels in upper 0.05 m thickness of layer. Mudstone, heavily degraded, with depth.	0.40–1.40
50704		?Bedrock	GRAVEL of flint and quartzite. Mostly rounded to well rounded, gravel to coarse gravel sized, few angular clasts. Occurs on northern end of trench and thins rapidly to south.	1.40–1.70
50705		Bedrock	Firm to slightly stiff greyish brown to brown slightly sandy (very fine) gravelly CLAY. Some texture evident. Rootlets present. Degraded fragments of mudstone gravels present, making the surrounding medium a paler colour where present in bulk. Increasing textural preservation with depth. Selenite crystals (recrystallization) occurring with depth.	1.40–4.00+

TP508 (WA508)	Length 2.90 m	Width 0.66 m	Depth 4.00 m
Easting 446183.70	Northing 122323.30	m OD 24.39	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
50801		Topsoil	Plough soil. Under grass. Soft dark brown slightly sandy gravelly CLAY. Gravels of flint (common, sub-rounded to sub-angular , fine gravel to gravel sized) and chalk (uncommon to common, sub-angular to angular, ≤fine gravel to gravel sized). Thickest to east (downslope). Clear contact.	0.00–0.20
50802		Subsoil	Soft greyish brown slightly sandy gravelly CLAY. Very common gravel to coarse gravel sized flint and quartz (rounded to sub-angular , trending rounded, ≤fine gravel to gravel sized) with sparse fine gravel sized chalk (sub-rounded to angular) mostly present in upper portion of layer. Thickest to west (upslope).Gradual boundary with (50803) At extreme western end this may be deepening to 0.40m.	0.20–0.40
50803		Head-Brickearth Deposits	Firm to stiff pale brown mottled pale orangish brown (looking pale yellowish brown en masse) slightly sandy gravelly CLAY. Sparse embedding of rounded gravels in upper 0.05 m thickness of layer. Mudstone / heavily degraded as a partial layer between 0.90 and 1.00m.	0.35–1.00
50804		Bedrock	Geology. Firm / slightly stiff greyish brown to brown slightly sandy (very fine) gravelly CLAY. Some bedding observed. Rootlets present. Weathered fragments of mudstone present, gravel sized, making the surrounding medium a paler colour where present in bulk.	1.00–4.00+

TP509 (WA509)	Length 3.10 m	Width 0.66 m	Depth 4.00 m
Easting 446175.60	Northing 122310.70	m OD 23.75	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
50901		Topsoil	Plough soil. Under grass. Soft dark brown slightly sandy gravelly CLAY. Coarse gravels to small cobble sized flint (common, sub-rounded to sub-angular) and chalk (uncommon to common, sub-angular to angular). Thickest to east (downslope). Rare CBM fragments. Clear boundary with (50902).	0.00–0.20
50902		Subsoil	Soft greyish brown slightly sandy gravelly CLAY. Frequent medium to coarse gravels of flint and quartz (rounded to sub-angular , trending rounded, fine gravel to gravel sized) with sparse fine gravel to gravel sized chalk (sub-rounded to angular) mostly present in upper portion of layer. Thickest to west (upslope). Gradual contact with (50903).	0.20–0.30
50903		Head-Brickearth Deposits	Geology. Firm to stiff pale brown mottled pale orangish brown (looking pale yellowish brown en masse) slightly sandy gravelly CLAY. Sparse rounded gravel sized flint in upper 0.05 m thickness of layer.	0.30–1.00
50904		Bedrock	Geology. Firm / slightly stiff greyish brown to brown slightly sandy (very fine) gravelly CLAY. Some bedding seen. Rootlets present. Degraded fragments of mudstone gravels present, making the surrounding medium a paler colour where present in bulk. Gravel concentrated 1.30-1.55.	1.00–1.65
50905		Bedrock	Geology. Firm / slightly stiff greyish brown to brown slightly sandy (very fine) gravelly CLAY. Some bedding seen. Rootlets present. Degraded fragments of mudstone gravels present. Bedding becoming more evident with depth. Selenite crystals (recrystallization) occurring with depth. Gravels are irregularly distributed throughout.	1.65–4.00+

Site Code: **271400**	**Site Name:** **Hampshire Water Transfer and Water Recycling Project**	**Borehole ID:** **2E3000RC (WA8032)**
Coordinates (NGR) X: **466,400.00**	**Coordinates (NGR) Y:** **106,501.70**	**Level (top):** **91.57 m OD**
		Depth: **5.00 m**

Context Number	**Description**	**Interpretation**	**Depth m BGL**	**Depth m OD**	**Samples**
807201	Mid greyish brown loam. Common chalk incl. S / R 2-20 mm. Very light root disturbance from crop. Clear contact.	Topsoil	0.00–0.40	91.57–91.07	
807202	Chalk. Very compact with large flint nodules.	Bedrock	0.40–5.00+	91.07–86.47+	

Site Code: 271400	**Site Name:** Hampshire Water Transfer and Water Recycling Project	**Borehole ID:** 2E3001RC (WA8031)
Coordinates (NGR) X: 466,431.60	**Coordinates (NGR) Y:** 106,548.73	**Level (top):** 85.11 m OD
		Depth: 5.00 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
807101	Mid greyish brown loam. Common chalk incl. S / R 2-20 mm. Very light root disturbance from crop. Clear contact.	Topsoil	0.00–0.25	85.11–84.86	
807102	Pale greyish brown silt. Common chalk incl. S / R 2-20 mm. Clear contact.	Subsoil	0.25–0.40	84.86–84.71	
807103	Clean, compact chalk.	Bedrock	0.40–5.00+	84.71–80.11+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2E3002RC (WA8030)
Coordinates (NGR) X: 466,443.80	Coordinates (NGR) Y: 106,478.99	Level (top): 92.01 m OD
		Depth: 5.00 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
807001	Mid greyish brown loam. Common chalk incl. S / R 2-20 mm. Very light root disturbance from crop. Clear contact.	Topsoil	0.00–0.22	92.01–91.79	
807002	Chalk. Weathered chalk down to 0.6 m followed by clean solid chalk geology.	Bedrock	0.22–5.00+	91.79–87.01+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2F3500DS (WA896)
Coordinates (NGR) X: 460,040.18	Coordinates (NGR) Y: 108,005.08	Level (top): 56.12m OD
		Depth: 4.00 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
89601	Loose brown sandy CLAY with very common angular fine gravel to coarse gravel sized flint and chalk. CBM seen.	Made Ground	0.00–0.30	56.12–55.82	
89602	Soft off-white silty GRAVEL, with gravel being angular to subrounded fine gravel to coarse gravel sized weak chalk.	Made Ground	0.30–0.50	55.82–55.62	
89603	Loose orangey brown sandy CLAY with common angular fine gravel to coarse gravel sized flint and chalk. Few cobble sized clasts of flint.	Made Ground	0.50–1.20	55.62–54.92	
89604	Soft greyish brown slightly sandy CLAY with abundant coarse components very angular to subrounded fine gravel to gravel sized flint, chalk, CBM, with few timber fibres and fragments of metal and rubber.	Made Ground.	1.20–1.48	54.92–54.64	
89605	Black ash.	Made Ground	1.48–1.50	54.64–54.62	
89606	Soft to firm brown slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine gravel to coarse gravel sized chalk and flint. Uncommon coarse gravel sized clasts. Rare shells/shell debris (≤<10 mm). Between 2.45-2.80 predominantly chalk and flint gravel with clayish matrix.	Slope Deposits	1.50–3.25	54.62–52.87	
89607	CHALK. Off-white tacky SILT with occasional clasts (≤20 mm) of very weak medium density white unstained chalk (Ungraded). Putty consistency.	Bedrock	3.25–4.00+	52.87–52.12+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2F3501DS (WA895)
Coordinates (NGR) X: 459,521.54	Coordinates (NGR) Y: 108,106.83	Level (top): 44.36m OD
		Depth: 4.00 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
89501	Soft light brown silty CLAY with frequent angular gravel to coarse gravel sized (≤5cm) angular chalk.	Topsoil	0.00–0.30	44.36–44.06	
89502	Yellowish brown silty CLAY with common subangular fine gravel to coarse gravel sized chalk and flint.	Slope Deposits	0.30–1.20	44.06–43.16	
89503	Stiff brown slightly sandy slightly gravelly (locally gravelly) CLAY. Gravel is very angular to subangular fine gravel to coarse gravel sized chalk and flint. Poor sorting.	Slope Deposits	1.20–3.20	43.16–41.16	
89504	CHALK, white SILT with rare angular clasts (≤15 mm) of extremely weak to very weak low/medium density white unstained chalk. Putty-like composition.	Bedrock	3.20–4.00+	41.16–40.36+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2L6003SA (WA852)
Coordinates (NGR) X: 448,993.64	Coordinates (NGR) Y: 120,423.88	Level (top): 41.27m OD
		Depth: 10.00 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
85201	Compact slightly sandy silty CLAY with common subangular gravel sized flint. Sand is medium.	Topsoil	0.00–0.30	41.27–40.97	
85202	Soft to firm brownish orange mottled blueish grey slightly sandy CLAY with no seen gravel. Sand is medium. Becoming stiffer with depth, stiff by 3.55. Few shell fragments <3mm after 3.55.	Slope deposits	0.30–3.60	40.97–37.67	
85203	Stiff bluish grey CLAY.	Bedrock	3.60–10.00+	37.67–31.27+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2L6005SA (WA854)
Coordinates (NGR) X: 448,973.48	Coordinates (NGR) Y: 120,473.02	Level (top): 35.54 m OD
		Depth: 7.30 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
85401	Soft, dark brown sandy CLAY with sparse to uncommon subangular to subrounded fine gravel sized flint Sand is medium to coarse. Redeposited.	Topsoil	0.00–0.15	35.54–35.39	
85402	Soft mid to pale greyish brown (locally orangish brown) sandy gravelly CLAY. Contains fragments of asbestos cement sheet, CBM (frogged brick with mortar), glass, slag (none retained due to asbestos). Rootlets and sparse gravel sized flint also evident. Sand is medium to coarse.	Made Ground.	0.15–0.60	35.39–34.94	
85403	Made ground. Soft orangish brown slightly gravelly sandy CLAY. Coarse components of CBM and flint. Sand is medium.	Made Ground	0.60–0.70	34.94–34.84	
85404	Soft, orangey brown mottled reddish brown slightly sandy CLAY. Uncommon rooting seen 0.70-1.20m. Sand is medium. Becoming stiffer with depth.	Slope Deposits	0.70–2.40	34.84–33.14	
85405	Stiff brown mottled grey sandy CLAY with common subrounded gravel sized mudstone. Sand is medium.	Bedrock	2.40–7.30+	33.14–28.24+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2L6007DR (WA8017)
Coordinates (NGR) X: 448,878.60	Coordinates (NGR) Y: 120,643.10	Level (top): 26.90 m OD
		Depth: 4.60 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
801701	Soft and very wet dark to very dark greyish brown CLAY with frequent organic components (mostly roots). Sharp, even contact.	Topsoil.	0.00–0.16	26.90–26.74	
801702	Firm pale yellowish brown to orangish brown (locally pale grey) slightly sandy CLAY.	Alluvium	0.16–0.50	26.74–26.40	
801703	Firm orangish brown (locally pale grey) gravelly CLAY. Gravels of flint (fine, medium, coarse; moderate to common; sub-rounded to angular; ≤35 mm).	Alluvium	0.50–1.10	26.40–25.80	
801704	Stiff orangish brown (locally pale grey) slightly gravelly CLAY. Gravels of fine, medium and coarse flint (≤35 mm; rounded to angular). Moderate small black (manganese) mottles. Gravels rapidly diminish in density.	Alluvium.	1.10–2.00	25.80–24.90	
801705	Stiff bluish grey CLAY with rare shell debris.	Bedrock	2.00–4.60+	24.90–22.30+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2L6008DR (WA8018)
Coordinates (NGR) X: 448809.00	Coordinates (NGR) Y: 120647.00	Level (top): 25.02 m OD
		Depth: 11.70 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
801801	Soft light brown CLAY. Abundant rooting. No seen clasts. Gradual boundary with (801802).	Topsoil	0.00–0.30	25.02–24.72	
801802	Firm light brown CLAY. Grey mottling appearing at 1. Becoming fissured between 0.8-1.2. Rare amorphous organic matter. Gradual boundary with (810803)	Alluvium	0.30–1.20	24.72–23.82	
801803	Very firm grey-brown CLAY.	Alluvium	1.20–1.80	23.82–23.62	
801804	Soft to firm blueish grey mottled orangey brown CLAY AND GRAVELS, with gravel being very angular to subrounded fine gravel to coarse gravel sized flint. Becoming gravellier with depth.	Alluvium.	1.80–2.75	23.62–22.67	
801805	Stiff bluish grey silty CLAY with rare fossil shell valves and shell fragments. Becoming stiffer with depth.	Bedrock	2.75–11.70+	22.67–17.72+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2L6009DR (WA8019)
Coordinates (NGR) X: 448545.06	Coordinates (NGR) Y: 120745.04	Level (top): 23.12 m OD
		Depth: 7.00 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
801901	Soft loose brown slightly sandy CLAY with common subrounded gravel to coarse gravel sized flint from 0.3. CBM (brick) inclusions present, fine gravel to gravel sized. Gradual boundary with (801902).	Topsoil	0.00–0.40	23.12–22.72	
801902	Soft light brown mottled black clayish SAND AND GRAVEL. Gravel is angular to subangular gravel to coarse gravel sized flint. Some tertiary flint clasts. Water strike at 0.60m	Alluvium	0.40–0.70	22.72–22.42	
801903	Medium dense orangey brown mottled grey slightly clayish silty SAND AND GRAVEL, with gravel being angular to subangular fine gravel to coarse gravel sized flint. Common shell fragments. Semi-common irregular silt bands.	Alluvium	0.70–0.90	22.42–22.22	
801904	Soft orangey brown indistinctly sub-horizontally laminated sandy CLAY with no seen coarse components. Irregular lensing of brown and black ?organic material, maximum size 30mmx5mm.	Alluvium	0.90–2.55	22.22–20.57	
801905	Stiff dark blueish grey indistinctly sub horizontally laminated slightly silty sandy CLAY with sparse to uncommon fine gravel to gravel sized flint, flint frequently cortex. Occasional lenses of calcareous silt containing shell fragments (<25mm).	Bedrock	2.55–-7.00+	20.57–16.12+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 2L6010DR (WA8020)
Coordinates (NGR) X: 448545.10	Coordinates (NGR) Y: 120745.00	Level (top): 23.12 m OD
Length:	Width:	Depth: 10.30 m

Context Number	Description	Interpretation	Depth m BGL	Depth m OD	Samples
802001	Soft to firm yellowish brown slightly gravelly sandy CLAY with common fine roots from turf, decreasing with depth. Sparse to occasional medium to coarse (rare fine) angular to sub-rounded gravels of flint. Fine and medium sand. Low (rare) cobble content (≤125x72x68 mm). Slight iron staining along root channels.	Topsoil. Grass turf (0.07 m thickness).	0.00–0.30	23.12–22.82	
802002	Firm/compact yellowish brown slightly sandy very gravelly CLAY. Frequent angular to sub-rounded fine to coarse gravels of flint. Occasional cobbles (≤115x80x62 mm). Fine to medium sand. Water from 0.60 m bgl. Clay rapidly reduces in density between 0.30 and 0.60 m bgl.	Alluvium	0.30–0.66	22.82–22.46	
802003	Compact yellowish brown slightly sandy GRAVEL. Abundant fine to coarse angular to sub-rounded gravels of flint. Sparse cobbles ≤110x80x55 mm. Possible clay coatings on flint due to water content. Fine to coarse sand.	Alluvium	0.66–0.68	22.46–22.44	
802004	Soft to firm orangish brown occasionally mottled dark brown, slightly sandy gravelly CLAY with occasional laminae of black lignite material in silt matrix (up to 20mm x 1.0mm (possibly root) with occasional shell fragments <3mm. Sand is fine to coarse. Gravel is angular to sub-angular fine to coarse blackish grey flint.	Alluvium	0.68–2.40	22.44–20.72	
802005	Soft to firm indistinctly laminated bluish grey sandy gravelly CLAY. Sand is fine to coarse gravels are angular to sub-angular fine to coarse black and grey flint.	Alluvium	2.40–3.90	20.72–19.22	
802006	Stiff bluish grey sandy CLAY with occasional pyrite crystals and shell fragments. Sand is fine.	Bedrock	3.90–10.30+	19.22–12.82+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: BH505 (9505)
Coordinates (NGR) X: 446,379.92	Coordinates (NGR) Y: 121,990.89	Level (top): 17.10 m OD
		Depth: 6.45 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
950501	Soft dark slightly reddish brown slightly gravelly slightly clayey SILT. Gravel is few fine to medium (<10mm) subangular flint clasts. Brecciated structure with frequent fine to medium modern rooting Lower boundary is unclear	Topsoil/Subsoil	0.00–0.40	17.10–16.70	
950502	Very soft slightly reddish brown slightly sandy very gravelly CLAY. Gravel is fine to coarse (2-25mm) angular to subangular (20:80) flint clasts. Lower boundary is unclear	Alluvium	0.40–0.70	16.70–16.40	
950503	Light grey and brown very sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse (2-36m) with few cobble-sized (<70mm) subangular (65%) to subrounded (25%) and few well rounded (10%) flint. Poorly sorted and structureless Lower boundary is unclear	River Terrace Deposits	0.70–3.40	16.40–13.70	
950504	Light greyish brown very sandy GRAVEL. Sand is fine to coarse. Gravel is fine (<5mm) with few medium to coarse (8-28mm) subangular (30%) to subrounded (70%) flint clasts with very few cobble-sized (<90mm) subrounded flint. Moderately sorted and structureless Lower boundary is unclear	River Terrace Deposits	3.40–3.80	13.70–13.30	

950505	Firm dark grey slightly gravelly slightly sandy slightly clayey SILT with common fine (<4mm) shell fragments. Sand is fine. Gravel is fine (<5mm) subangular (80%) to subrounded (20%) flint with few coarse (8-16mm) subangular flint clasts. Lower boundary is unclear	River Terrace Deposits	3.80–5.45	13.30–11.65+	
950506	Stiff dark grey slightly sandy clayey SILT with common fine to medium (<8mm) shell fragments	Bedrock	5.45–6.45+	11.65–10.65+	

3E7501IT (WA7501)	Length 3.00 m	Width 0.65 m	Depth 2.50 m
Easting 466,418.85	Northing 106,462.60	m OD 92.27	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
750101		Topsoil	Light brown poor TOPSOIL with frequent chalk and flint inclusions. flint is generally between 40-50mm and sub angular. no sorting. poorly consolidated and structureless. Clear sub horizontal contact.	0.00–0.30
750102		Bedrock	White massive CHALK with whole flint nodules, sub rounded and sub angular clasts of black flint with cortex.	0.30–2.50+

3E7502IT (WA7502)	Length 3.00 m	Width 0.65 m	Depth 2.50 m
Easting 466,455.92	Northing 106,483.59	m OD 91.45	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
750201		Topsoil	Light brown TOPSOIL with chalk and flint fragments Structureless poorly consolidated clear sub horizontal contact	0.00–0.20
750202		Bedrock	White CHALK, massive and containing flint nodules, well rounded to sub angular	0.30–2.50+

3E7503IT (WA7503)	Length 3.00 m	Width 0.65 m	Depth 2.30 m
Easting 466,459.27	Northing 106,508.14	m OD 90.08	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
750301		Topsoil	Firm yellowish brown sandy friable CLAY with very frequent subangular chalk. Rare large 15cm subangular flint. Topsoil.	0.00–0.30
750302		Bedrock	CHALK bedrock.	0.30–2.30+

3E7505IT (WA7505)	Length 3.00 m	Width 0.65 m	Depth 2.50 m
Easting 466,447.87	Northing 106,461.18	m OD 91.94	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
750501		Topsoil	Light brown loose friable TOPSOIL with frequent chalk and flint inclusions, slightly rooted. poorly consolidated and structureless. Clear sub horizontal contact.	0.00–0.25
750502		Bedrock	White massive CHALK with whole flint nodules.	0.25–2.50+

3E7506IT (WA7506)	Length 3.00 m	Width 0.65 m	Depth 2.50 m
Easting 466,393.32	Northing 106,469.92	m OD 92.26	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
750601		Topsoil	Light brown friable TOPSOIL loose, dry and slightly sand. frequent with chalk and flint clear sub horizontal contact	0.00–0.20
750602		Bedrock	White CHALK with flint massive and very hard.	0.20–2.50+

3E7507IT (WA7507)	Length 3.00 m	Width 0.65 m	Depth 2.50 m
Easting 466,392.80	Northing 106,500.16	m OD 90.21	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
750701		Topsoil	Light brown TOPSOIL. rich in chalk fragments and large cobbles of flint and flint gravel. well-rounded to sub rounded nodules, and angular to sub angular fine to medium clasts, with little to no cortex. Structureless, poorly consolidated and clear sub horizontal contact with	0.00–0.20
750702		Bedrock	White CHALK with flint. Massive and very stiff.	0.20–2.50+

3E7508IT (WA7508)	Length 3.00 m	Width 0.65 m	Depth 2.50 m
Easting 466,404.76	Northing 106,524.58	m OD 86.97	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
750801		Topsoil	Chalky and flint gravelly TOPSOIL with some rooting but generally loose, poorly consolidated. light brown, poor soil	0.00–0.20
750802		Bedrock	White CHALK	0.20–2.50+

3K5604HP (WA5604)	Length 0.30 m	Width 0.30 m	Depth 1.20 m
Easting 453,274.99	Northing 117,636.92	m OD 45.95	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
560401		Topsoil	Dark brown silty CLAY, heavily rooted	0.00–0.10
560402		Bedrock	Stiff light orangish brown silty CLAY with frequent light orange mottles.	0.10–1.20+

3L6024HP-B (WA6024)	Length 0.30 m	Width 0.30 m	Depth 1.20 m
Easting 453,274.99	Northing 117,636.92	m OD 45.95	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
602401		Topsoil	Dark brown silty CLAY, heavily rooted	0.00–0.10
602402		Topsoil	Mid brown silty CLAY with common mottles of grey. Rare subangular flint 2cm in size. Structureless.	0.10–0.50
602402		Bedrock	Stiff light orangish brown silty CLAY with frequent light orange mottles.	0.50–1.20+

3E3034HP (WA3034)	Length 0.30 m	Width 0.30 m	Depth 1.20 m
Easting 461,782.03	Northing 107,750.95	m OD 52.34	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
303401		Head	Dark slightly yellowish brown silty gravelly CLAY. Gravel is subangular (70%) to subrounded (30%) flint, ranging in size from 2cm to rare 15cm.	0.00–1.00
303402		Head	Mid slightly yellowish brown silty gravelly CLAY. Gravel is subangular (60%) to subrounded (40%). Ranges from 0.5-2cm (90%) to 10cm (10%).	0.50–1.20+

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 3E3035DS (WA3035)
Coordinates (NGR) X: 461,558.10	Coordinates (NGR) Y: 107,809.02	Level (top): 56.94 m OD
		Depth: 3.30 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
303501	Mid brown silty CLAY, heavily rooted for first 0.05m. Occasional subangular flint gravel, 2-4cm in size.	Topsoil	0.00–0.35	56.94–56.59	
303502	Light greyish brown clayey silty chalk GRAVEL. Chalk is subangular and soft.	Head	0.35–1.35	56.59–55.59	
303503	Clayey CHALK gravel with occasional mid brown smears. Gravel is subangular when broken.	Bedrock	1.35–3.30+	55.59–53.64+	

3F3521HP (WA3521)	Length 0.30 m	Width 0.30 m	Depth 1.20 m
Easting 458,501.56	Northing 108,719.28	m OD 11.23	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
303401		Slope Deposits	Dark yellowish orangish brown silty CLAY, becoming siltier with depth. Very rare flint 10cm in size, rare subangular flint 2-5cm in size, not worked.	0.00–0.70
303402		Slope Deposits	Dark yellowish orangish brown silty CLAY. More clayey than above. Rare subangular flint, very rare subrounded flint, 2-5cm in size.	0.70–1.20+

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 3G4024DS (WA4024)
Coordinates (NGR) X: 456,584.98	Coordinates (NGR) Y: 111,996.93	Level (top): 55.82 m OD
		Depth: 4.00 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
402401	Moderately soft dark greyish brown gravelly clayey SILT. Gravel is fine to coarse, subrounded to subangular flint. Structureless. Rooting common in upper 0.15m. Sharp to 402402	Topsoil	0.00–0.40	55.82–55.42	
402402	Moderately firm brownish orange gravelly CLAY. Gravel. is fine (40%), medium (30%) to coarse (30%), subangular (80%) to subrounded (20%) flint. Low sphericity. Structureless.	River Terrace Deposits	0.40–1.30	55.42–54.52	
402403	Moderately firm. yellowish orange slightly silty clayey sandy GRAVEL. Sand is medium to coarse. Gravel is fine (70%) to medium (30%), subrounded (40%) to subangular (60%). Moderately low sphericity. Moderately well sorted. Matrix supported. Structureless. Sharp to 402404	River Terrace Deposits	1.30–1.70	54.52–54.12	
402404	Moderately firm reddish yellow slightly clayey silty SAND. Sand is medium. Structureless.	Bedrock	1.70–4.00+	54.12–51.82+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 3G4102SA (WA4102)
Coordinates (NGR) X: 456,666.05	Coordinates (NGR) Y: 112,101.24	Level (top): 55.20 m OD
		Depth: 20.00 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
410200	Soft dark greyish brown slightly gravelly sandy silty CLAY. Sand is fine to coarse. Gravel is sparse angular to sub-rounded fine to coarse chert ≤60 mm. Extremely rare angular medium to coarse brick fragments ≤60 mm. Diffuse contact. Bioturbated.	Topsoil	0.00–0.35	55.20–54.85	
410201	Soft mid brown mottled red sandy gravelly CLAY. Sand is fine to coarse. Gravel is moderate sub-angular to sub-rounded fine to coarse chert ≤60 mm. Abrupt contact.	River Terrace Deposits	0.35–0.85	54.85–54.35	
410202	Soft mid reddish brown mottled grey sandy gravelly CLAY. Sand is fine to coarse. Gravel is common sub-angular to sub-rounded fine to coarse chert ≤60 mm.	River Terrace Deposits	0.85–2.00+	54.35–53.20+	

Site Code: 271400	**Site Name:** Hampshire Water Transfer and Water Recycling Project	**Borehole ID:** 3G4105SA (WA4105)
Coordinates (NGR) X: 456,361.04	**Coordinates (NGR) Y:** 111,685.94	**Level (top):** 51.74 m OD
		Depth: 3.50 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
410501	Dark brown slightly sandy silty CLAY with frequent inclusions of subangular flint. No archaeological finds.	Topsoil	0.00–0.30	51.74–51.44	
410502	Mid yellowish brown silty gravelly CLAY. Gravel is flint, 10% subrounded (all gravel under 0.5cm), 90% subangular. subangular gravel is between 2 and 5cm.	River Terrace Deposits	0.30–0.60	51.44–51.14	
41503	Water strike at 0.65mbgl. Mid to light brownish yellow silty clayey GRAVEL. Gravel is 10% under 1cm in size, 70% 1-3cm, 20% 3-5cm. Minor increase in fine gravel with depth, up to 20%. Gravel is 90% subangular, 10% subrounded. Gravel predominantly flint.	River Terrace Deposits	0.60–2.50	51.14–50.24	
41504	Stiff light grey clayey SAND with mid brownish red mottles	Bedrock	2.50–3.50+	50.24–49.24+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 3G4106SA (WA4106)
Coordinates (NGR) X: 456,360.04	Coordinates (NGR) Y: 111,733.90	Level (top): 52.77 m OD
		Depth: 4.50 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
410601	Moderately soft mid greyish brown slightly gravelly sandy SILT. Sand is fine. Gravel is fine to medium subangular flint. Rooting frequent in upper 0.15m bgl. Structureless. Sharp to 410602.	Topsoil	0.00–0.48	52.77–52.29	
410602	Moderately firm pale yellowish brown to greyish brown clayey GRAVEL. Gravel is fine (40%) to medium (55%) to coarse (5%) subangular (70%) to subrounded (30%) flint. Structureless. Matrix supported. Moderately well sorted. Low sphericity. Gradual to 41603	River Terrace Deposits	0.48–0.90	52.29–52.87	
410603	Moderately firm dark reddish brown to orangish brown sandy clayey GRAVEL. Sand is medium. Gravel is fine (30%), medium (40%) to coarse (30%) angular (15%), subangular (50%), subrounded (30%) to rounded (5%) flint. Matrix supported. Low sphericity. Moderately poorly sorted. Structureless	River Terrace Deposits	0.90–2.20	52.87–50.57	
410604	Moderately firm orangish brown slightly clayey sandy GRAVEL. Sand is medium to coarse. Gravel is fine (20%), medium (50%) to coarse (30%) subangular (50%) to subrounded (50%) flint. Moderately low sphericity. Clasts supported. Moderately well sorted.	River Terrace Deposits	2.20–3.80	50.57–48.97	
410605	Moderately firm mid grey silty SAND. Sand is fine. Structureless	Bedrock	3.80–4.50+	48.97–48.27+	

3G7525IT (WA725)	Length 3.00 m	Width 0.65 m	Depth 1.50 m
Easting 456,362.65	Northing 111,669.78	m OD 51.64	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
752501		Topsoil	Ploughsoil. Soft, dark brown slightly sandy slightly clayey gravelly SILT. Gravel is fine to coarse, sub-angular to rounded flint. Sand is fine to very fine.	0.00–0.30
752502		River Terrace Deposits	Transitional zone material. Soft dark orangish brown slightly sandy silty clay GRAVEL. Matrix supported? Sand is fine to medium. Gravels of flint are fine to coarse, angular (15%), sub-angular (65%), sub-rounded (20%, including rare rounded examples) with few cobbles (<90 mm); all are low sphericity. Clear lower contact.	0.30–0.80
752503		River Terrace Deposits	Pale yellowish brown (upper - 0.80-1.00 m bgl) and orangish-brown (1.00+ m bgl) moderately sorted slightly sandy silty clay GRAVEL. Sand is medium, becoming coarse with depth. Clast supported. Gravels and cobbles of fine to coarse, angular to rounded, flint. Fine (10%), medium (40%) and coarse (50%) gravels. Angular (20%), sub-angular (60%), sub-rounded (15%), rounded (5%). Cobbles are sub-angular to sub-rounded (140x100x75 mm), cortical and nodular). Larger gravels and cobbles increase by proportion with depth. Many gravels and cobbles have fractured through transportation, deposition and extraction.	0.80–1.50+

3G7530IT (WA7230)	Length 3.00 m	Width 0.65 m	Depth 2.50 m
Easting 456,335.17	Northing 111,688.05	m OD 52.17	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
753001		Topsoil	Ploughsoil. Soft, dark brown slightly sandy slightly clayey gravelly SILT. Gravel is fine to coarse, sub-angular to rounded flint. Sand is fine to very fine.	0.00–0.25
753002		Subsoil	Soft brown slightly clayey gravelly sandy SILT. Gravels of fine to coarse, sub-angular to rounded flint. Sand is fine / very fine.	0.25–0.40
753003		River Terrace Deposits	Mixed colouring. Mid to strong orange brown and pale to very pale brown sandy silty GRAVEL. Sand is fine to coarse. Sparse nodular / cortical flint cobbles (≤140x140x70 mm; broken) also occurring. Gravels are fine (20%), medium (40%) and coarse (40%); all low sphericity: angular (20%), sub-angular (50%) sub-rounded (20%), rounded (10%). Cobbles are generally sub-angular to sub-rounded, low sphericity. Cobbles increase to occasional after 2.00 m bgl representing as much as 10% of the overall coarse component value. Palest colours in upper zone (0.40-0.90 m bgl). Clast supported. Sand content increases below 2.00 m bgl, with small yellowish / orangish brown coarser sand pockets beginning to occur around 2.30 m bgl.	0.40–2.50+

3L6017HP (WA6017)	Length 0.30 m	Width 0.30 m	Depth 1.20 m
Easting 456,335.17	Northing 111,688.05	m OD 52.17	

Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
601700		Topsoil	Soft mid brown grey silty CLAY. No coarse components. Turf over. Abrupt contact.	0.00–0.30
601701		Bedrock	Soft mid yellowish brown mottled mid grey silty CLAY. No coarse components. Becomes firmer from 0.60 m bgl.	0.30–1.20+

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 3W8553DS (WA8553)
Coordinates (NGR) X: 458,261.30	Coordinates (NGR) Y: 109,090.65	Level (top): 20.23 m OD
		Depth: 6.00 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
855301	Dark greyish brown silty CLAY with frequent subangular and rare subrounded flints, 1-3cm in size, rare 8cm cobble.	Topsoil	0.00–0.20	20.23–20.03	
855302	Stiff mid orange yellow brown silty CLAY. Frequent subangular flints 1cm in size with occasional chalk gravel and smears of chalk.	Slope Deposits	0.20–1.20	20.03–19.03	
855303	Light yellowish brown silty CLAY with very frequent chalk gravel, subangular (70%), to subrounded (30%). Chalk is also crushed and mixed with clay. 80% 1-2cm in size, 20% 2-4cm.	Slope Deposits	1.20–1.65	19.03–18.58	
855304	Off white CHALK with smears of yellow brown clay. Rare 2cm subangular flints.	Bedrock	1.65–6.00+	16.58–14.23+	

Site Code: 271400	Site Name: Hampshire Water Transfer and Water Recycling Project	Borehole ID: 3W8554DS (WA8554)
Coordinates (NGR) X: 458,250.66	Coordinates (NGR) Y: 109,123.13	Level (top): 22.86 m OD
		Depth: 6.45 m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
855401	Dark greyish brown silty CLAY with frequent subangular and rare subrounded flints, 1cm in size, rare 8cm cobble.	Topsoil	0.00–0.20	22.86–22.66	
855402	Stiff mid orange yellow brown silty CLAY. Frequent subangular flints 1cm in size with rare chalk smears and gravel.	Slope Deposits	0.20–0.70	22.66–22.16	
855403	Light yellowish brown silty CLAY with very frequent chalk gravel, subangular (70%) to subrounded (30%). Chalk is also crushed and mixed with clay, giving it an off-white colour. 80% 1cm in size, 20% 3cm.	Slope Deposits	0.70–2.70	22.16–20.16	
855404	Off white CHALK with smears of yellowish-brown clay. Very rare 2cm subangular flints.	Bedrock	2.70–6.45+	20.16–16.41+	

Appendix 5 Data used in the deposit model

Name	Easting	Northing	Total depth (m)	Elevation (m OD)
2B1500SA	470197.85	105941.00	10.00	3.95
2D2500SA	468261.73	106211.84	10.45	48.79
2D2501DS	466848.01	106270.04	3.50	66.84
2E3000RC	466400.00	106501.70	30.85	91.57
2E3001RC	466431.60	106548.73	8.30	85.11
2E3002RC	466443.80	106478.99	30.80	92.01
2F3500DS	460040.18	108005.08	4.30	56.12
2F3501DS	459521.54	108106.83	4.30	44.36
2F3502SA	458802.18	108516.18	20.45	9.12
2F3503SA	458541.72	108691.51	20.00	8.52
2F3504DS	458234.16	108947.96	6.45	22.54
2F3505DS	458218.08	108970.87	6.45	23.47
2F3512RC	457718.28	109093.16	20.00	41.60
2F3513DS	457041.08	109323.89	3.25	44.04
2F3514DS	457026.58	109322.18	2.30	43.86
2F3515DS	456892.66	109312.96	4.70	41.95
2F3537DS	457045.75	109324.88	1.50	43.85
2G4000SA	456194.96	110259.97	20.00	19.29
2G4001SA	456116.19	110350.00	20.45	14.33
2G4002DS	455957.84	111181.42	3.00	45.42
2G4003DS	455966.75	111201.00	4.00	46.22
2G4004DS	455959.48	111182.94	3.45	45.45
2H4500DR	456953.67	113626.91	20.00	61.40
2H4501DR	456963.13	113618.91	20.20	61.38
2H4502DS	456695.97	113886.02	4.00	61.46
2H4503DS	456655.89	113905.03	5.45	60.03
2K5500SR	453971.41	115639.93	20.20	23.16
2K5501SR	453899.10	115871.36	20.00	17.75
2K5502DS	452139.83	119217.90	0.70	43.83
2K5503DS	452127.07	119223.91	0.90	43.73
2K5534DS	452144.28	119218.26	0.70	43.81
2K5535DS	452151.53	119213.24	0.70	43.99
2L6000TP	449000.59	120372.85	4.00	44.65
2L6001TP	448999.18	120392.92	2.60	43.35
2L6002SA	448996.44	120402.78	15.45	42.75
2L6003SA	448993.64	120423.88	15.45	41.27

Name	Easting	Northing	Total depth (m)	Elevation (m OD)
2L6004TP	448981.20	120451.41	3.90	37.58
2L6005SA	448973.48	120473.02	10.00	35.54
2L6006TP	448959.96	120507.88	2.40	30.34
2L6007DR	448878.58	120643.10	20.00	26.90
2L6008DR	448809.01	120646.98	20.10	25.02
2L6009DR	448545.06	120745.04	20.00	23.12
2L6010DR	448545.07	120794.51	20.00	21.44
2L6011SR	447176.00	121476.08	20.00	21.35
2L6012SR	447131.21	121517.07	20.00	20.66
2M6507SA	446510.00	123140.00	20.00	23.25
2M6508SA	446510.00	123140.00	20.45	23.25
3E3019DS	464699.71	107024.95	4.75	68.36
3E3020DS	464356.90	107191.22	1.80	65.33
3E3021DS	464168.75	107241.25	3.40	67.40
3E3022HP	464031.96	107253.84	0.90	64.55
3E3023TP	463914.92	107257.28	4.00	63.54
3E3028HP	462897.03	107493.55	1.20	64.76
3E3034HP	461782.03	107750.95	1.10	52.34
3E3035DS	461558.10	107809.02	3.30	56.94
3E3036DS	461362.98	107813.88	2.90	55.99
3E3038HP	460852.64	107820.84	1.00	51.18
3E3100DS	466550.92	106659.99	2.36	69.81
3E3101TP	466402.65	106637.92	3.00	77.81
3E3102TP	466239.96	106836.09	4.00	68.16
3E3103HP	466081.80	106971.28	1.20	53.42
3E3104HP	465799.11	107056.33	1.20	49.89
3E3105HP	465584.27	107068.74	1.20	49.67
3E3106TP	465290.22	106983.14	4.00	56.96
3E3107HP	465046.77	106975.02	1.10	66.04
3E3108TP	463829.92	107269.12	2.60	68.89
3E3109HP	463625.77	107324.02	1.20	62.40
3E3110DS	463460.46	107383.11	3.90	65.17
3E3111HP	463137.80	107419.90	1.20	59.83
3E3112TP	462508.15	107656.82	4.00	52.46
3E3113HP	462262.27	107689.95	1.20	56.38
3E3114DS	462050.28	107700.71	3.45	61.19
3E3115DS	462004.70	107706.59	6.45	61.56

Name	Easting	Northing	Total depth (m)	Elevation (m OD)
3E3117DS	459624.12	108113.07	2.34	47.46
3E3119HP	462706.15	107567.96	1.10	58.33
3E7501IT	466418.85	106462.60	2.50	92.27
3E7502IT	466455.92	106483.59	2.50	91.45
3E7503IT	466459.27	106508.14	2.30	90.08
3E7504IT	466435.26	106522.98	2.40	86.32
3E7505IT	466447.87	106461.18	2.50	91.94
3E7506IT	466393.32	106469.92	2.50	92.26
3E7507IT	466392.80	106500.16	2.50	90.21
3E7508IT	466404.76	106524.58	2.40	86.97
3F3519HP	459062.31	108333.14	1.10	31.43
3F3521HP	458501.56	108719.28	1.20	11.23
3F3523DR	458254.82	109016.76	30.20	19.52
3F3524DR	458230.47	108993.15	30.20	21.51
3F3601HP	459304.00	108303.00	1.20	31.43
3F3602HP	458309.74	108898.55	1.00	20.52
3F7509IT	458294.00	109004.00	2.50	17.20
3F7510IT	458252.33	109024.69	2.50	18.14
3F7512IT	458229.02	109027.71	2.50	20.40
3F7513IT	458271.00	108984.98	2.50	18.47
3G4022DS	456236.99	111625.00	3.60	55.07
3G4023HP	456522.07	111908.81	1.20	54.85
3G4024DS	456584.98	111996.93	6.45	55.82
3G4037DS	456290.00	111651.88	6.00	52.96
3G4038DS	456306.09	111676.69	6.45	52.56
3G4102SA	456666.05	112101.24	20.45	55.20
3G4105SA	456361.04	111685.94	30.45	51.74
3G4106SA	456360.04	111733.90	30.00	52.77
3G7525IT	456362.65	111669.78	1.50	51.64
3G7530IT	456335.17	111688.05	2.50	52.17
3H4507HP	457144.89	112357.05	1.20	57.94
3H4511HP	457137.98	112466.88	1.20	60.95
3H4513HP	457045.12	112950.24	1.20	43.12
3H4514HP	456999.76	113116.13	1.20	47.35
3H4515HP	456985.96	113268.03	1.20	53.86
3H4517SA	456425.14	113814.80	18.50	54.62
3H4600SA	456776.00	112112.58	20.00	54.21

Name	Easting	Northing	Total depth (m)	Elevation (m OD)
3H4602HP	457072.07	112187.94	1.10	54.68
3H4603HP	457113.99	112664.91	1.20	53.72
3H4606HP	456628.00	113868.96	1.20	58.79
3J5002SA	456270.87	113800.15	20.00	50.56
3J5003HP	456127.93	113964.93	1.20	51.00
3J5004DS	456037.00	114202.62	5.00	40.83
3J5007DS	456037.98	114271.94	6.45	39.39
3J5012HP	455776.00	114563.00	1.20	25.34
3J5013HP	455700.99	114752.86	1.20	45.46
3J5014TP	455576.86	114855.14	3.80	47.20
3J5015SA	455567.04	114852.64	10.45	48.33
3J5016TP	455556.01	114858.36	3.80	46.77
3J5017HP	455370.98	114971.01	1.20	53.40
3J5023HP	454631.85	115238.73	1.20	40.75
3J5024HP	454382.11	115259.04	1.20	34.90
3J5025HP	454212.85	115444.89	1.20	25.34
3J5026HP	454010.18	115603.42	1.20	25.34
3J5027DS	455224.41	115054.20	4.50	55.27
3J5028DS	455082.02	115232.19	5.45	54.02
3J5029DS	454874.00	115322.00	1.20	46.93
3J5101HP	455771.06	114593.93	1.20	38.02
3J5102HP	455712.06	114661.94	1.20	41.68
3K5511DS	453480.00	117568.00	6.45	36.00
3K5513HP	453045.96	117766.03	1.20	49.19
3K5515HP	452943.05	118253.86	1.20	56.02
3K5520CT	452807.09	118485.77	1.20	69.41
3K5520CT-A	452806.77	118486.71	1.20	69.35
3K5521CT	452797.95	118517.86	1.20	66.42
3K5521CT-A	452797.46	118517.10	1.20	66.52
3K5524CT	452768.99	118495.84	1.20	72.99
3K5524CT-A	452769.98	118496.68	1.20	72.72
3K5525DR	452793.93	118470.90	30.50	42.19
3K5527DR	452779.01	118528.90	8.45	67.23
3K5529HP	452663.15	118783.86	1.20	52.18
3K5530HP	452457.04	118899.01	1.20	49.20
3K5531DS	452356.28	119091.45	6.45	44.80
3K5540CT	452833.88	118500.24	1.20	65.91

Name	Easting	Northing	Total depth (m)	Elevation (m OD)
3K5540CT-A	452833.63	118499.55	1.20	65.00
3K5541CT	452772.19	118466.17	1.20	74.66
3K5541CT-A	452773.32	118465.14	1.20	74.61
3K5604HP	453274.99	117636.92	1.20	45.95
3K5606SA	452978.26	117981.17	20.45	45.16
3K5607HP	452945.22	118490.27	1.20	57.07
3K5608HP	452851.86	118629.71	1.20	52.03
3K5609HP	452379.84	118976.69	1.20	45.27
3K5610HP	452271.97	119130.02	1.20	45.18
3K7541IT	452791.72	118482.25	2.50	71.56
3K7542IT	452816.05	118499.77	2.50	66.38
3K7543IT	452807.79	118511.93	2.50	65.94
3K7544IT	452769.83	118473.89	2.50	74.65
3K7545IT	452757.01	118508.58	2.50	72.71
3K7546IT	452770.05	118530.87	2.50	67.70
3L6013HP	451839.03	119625.92	1.20	45.90
3L6015HP	451686.15	119819.51	1.20	40.99
3L6017HP	451379.99	119966.02	1.20	44.13
3L6023HP	450440.94	120205.78	1.20	39.53
3L6024HP	450204.69	120248.98	0.20	38.04
3L6024HP-A	450203.42	120250.60	0.20	37.88
3L6024HP-B	450203.94	120254.23	1.20	36.96
3L6026HP	449686.02	120423.99	1.20	30.64
3L6027HP	449517.03	120487.37	1.20	30.29
3L6028HP	449315.15	120421.73	1.20	35.43
3L6029HP	449075.04	120344.07	1.20	48.78
3L6044HP	447653.00	121187.00	1.20	29.00
3L6045HP	447382.72	121331.63	1.20	32.58
3L6046HP	447343.61	121392.10	1.20	37.41
3L6100HP	451757.77	119683.85	1.20	56.94
3L6101DS	451625.50	119889.12	6.45	41.06
3L6102HP	451446.90	119935.42	1.20	43.62
3L6103HP	451145.66	120062.05	1.20	43.19
3L6104HP	450910.35	120164.53	1.20	43.32
3L6105HP	450658.14	120173.83	1.20	41.08
3L6106DS	449956.04	120300.05	6.45	36.87
3L6107DS	449884.00	120321.00	6.45	36.00

Name	Easting	Northing	Total depth (m)	Elevation (m OD)
3M6517HP	446315.25	122611.74	1.20	22.70
3M6601HP	446328.98	122865.75	1.20	25.27
3W8526HP	458013.75	110414.91	0.95	43.38
3W8527HP	458066.97	110539.99	1.20	38.55
3W8528HP	457713.90	110765.07	1.20	32.40
3W8529SA	457556.99	110801.95	20.00	31.09
3W8530SA	457485.33	110793.26	20.00	30.10
3W8531HP	457280.91	110668.58	1.20	35.44
3W8532HP	456998.10	110576.06	1.20	38.88
3W8534DS	456298.00	111487.00	4.00	53.14
3W8535SA	456844.00	110705.88	20.05	21.92
3W8536SA	456626.46	110866.12	20.45	23.65
3W8538HP	456490.00	111275.00	1.20	49.70
3W8539DS	456294.00	111471.00	2.00	37.56
3W8553DS	458261.30	109090.65	6.45	20.23
3W8554DS	458250.66	109123.13	6.45	22.86
3W8556DS	458154.00	109388.00	5.45	67.40
3W8558SA	457897.89	109638.51	10.00	36.99
3W8559TP	457997.00	109898.00	4.00	36.39
3W8560HP	458017.81	110146.61	1.20	62.81
3W8563TP	457974.00	109870.00	4.00	48.74
3W8567SA	457987.00	109885.00	8.00	50.14
BH101	470331.67	106444.08	30.30	8.42
BH102	470468.74	106571.73	7.00	9.44
BH102A	470467.41	106568.80	50.30	9.40
BH103	470544.94	106683.38	40.20	12.97
BH104	470694.20	106951.40	55.00	14.40
BH105	470864.99	107115.47	35.00	16.66
BH106	471193.43	107587.48	30.00	12.59
BH107	471406.34	108170.85	30.50	16.37
BH108	471870.70	108824.74	60.00	24.97
BH109	471751.55	108771.48	18.50	15.84
BH202	469522.44	106020.78	59.80	13.98
BH301	468111.84	106302.61	100.30	64.34
BH302	466952.11	106299.92	91.50	76.17
BH303D	466633.36	106624.98	115.00	69.17
BH501	447070.00	121505.00	45.15	23.26

Name	Easting	Northing	Total depth (m)	Elevation (m OD)
BH502	446343.00	121905.14	25.00	17.09
BH503	446202.03	121945.52	55.00	20.46
BH504	446192.30	122315.75	50.50	24.01
BH505	446379.92	121990.89	16.50	17.10
BH506	446175.47	122125.70	55.70	22.67
BH507	446812.73	121652.38	1.75	19.38
BH507A	446813.11	121651.62	1.40	19.18
BH507B	446811.68	121652.62	1.90	19.29
BH507C	446731.32	121710.52	19.55	19.11
BH507D	446733.49	121710.35	40.60	19.49
BHP01	470093.49	105888.71	30.80	4.80
BHP02	470231.08	106121.28	26.10	5.36
BHP05	470282.07	106143.60	26.20	4.29
BHP06	470345.00	106203.41	35.20	3.91
BHRP01	470174.02	105752.08	30.20	13.39
BHRP02	470092.90	105721.49	26.49	10.27
BHW001	470296.22	105657.03	30.50	8.12
BHW002	470312.78	105671.63	30.83	8.43
BHW003	470360.69	105560.04	29.17	9.76
BHW004	470479.07	105426.10	30.20	5.19
BHW005	470671.07	105262.92	30.00	3.42
SU42SE141	449670.00	120990.00	10.00	33.53
SU42SE28	446990.00	122090.00	15.00	22.38
SU42SE29	446960.00	121730.00	10.50	19.50
SU42SE30	446650.00	122020.00	10.00	21.37
SU42SE31	446560.00	121530.00	10.00	16.73
SU42SE32	446260.00	121270.00	10.00	19.26
SU42SE33/A	446760.00	121250.00	25.00	17.54
SU42SE34	447050.00	121160.00	10.00	14.65
SU42SE35	447090.00	120720.00	10.00	20.03
SU42SE36	446740.00	120980.00	10.00	14.85
SU42SE37	446690.00	120750.00	10.00	14.14
SU42SE38	446430.00	121020.00	10.00	14.28
SU42SE39	446110.00	120860.00	15.05	14.50
SU42SE59	447910.00	120280.00	10.00	30.48
SU42SE60	449980.00	120950.00	10.00	36.58
SU42SE70	446870.00	123480.00	10.00	34.80

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SU42SE72	447240.00	123250.00	10.00	21.10
SU42SE73	447340.00	123240.00	15.00	21.10
SU42SE74	447510.00	123210.00	10.00	21.10
SU50NE202	458670.00	108360.00	8.95	6.80
SU50NE203	458840.00	108650.00	7.45	7.13
SU50NE204	458920.00	108790.00	7.95	7.60
SU50NE205	459200.00	108960.00	6.00	9.66
SU50NE206	459450.00	108970.00	5.00	9.00
SU50NE207	459760.00	109050.00	6.00	9.75
SU50NE251	456164.00	109643.00	1.60	40.00
SU50NE252	456169.00	109429.00	1.60	39.00
SU50NE253	455917.00	109326.00	1.80	34.00
SU50NE254	456099.00	109468.00	1.80	40.00
SU50NE255	456146.00	109237.00	2.20	35.00
SU50NE256	455967.00	109449.00	1.00	38.00
SU50NE279	459780.00	109080.00	10.00	9.70
SU51NW2	452780.00	118380.00	10.00	76.20
SU51NW3	452440.00	118600.00	10.00	53.34
SU51NW30	453850.00	118230.00	10.00	45.00
SU51NW31	453850.00	118230.00	10.00	62.00
SU51NW34	452370.00	118120.00	10.00	62.00
SU51NW41	451757.00	119515.00	10.00	50.00
SU51NW6	450380.00	119600.00	7.38	59.00
SU52SW24	451260.00	120420.00	10.00	35.60
SU52SW32	450000.00	120900.00	10.00	110.00
SU60NE123	467170.00	107770.00	12.19	37.67
SU60NE124	467220.00	107800.00	12.19	37.70
SU60NE125	467410.00	107850.00	3.04	117.60
SU60NE126	467600.00	107900.00	3.04	36.91
SU60NE127	467750.00	107930.00	18.28	37.22
SU60NE128	467800.00	107940.00	3.04	34.49
SU60NE129	467890.00	107970.00	3.04	119.80
SU60NE130	467920.00	108010.00	6.55	36.52
SU60NE131	467980.00	108070.00	3.04	37.49
SU60NE143	468230.00	107990.00	3.04	41.21
SU60NE254	465700.00	106210.00	7.31	48.46
SU60NE255	465700.00	106210.00	21.33	49.68

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SU60NE256	465830.00	106210.00	7.62	49.68
SU60NE257	465880.00	106210.00	21.33	49.68
SU60NE258	465930.00	106200.00	7.62	49.07
SU60NE259	465990.00	106200.00	21.33	50.29
SU60NE260	466060.00	106190.00	7.62	49.07
SU60NE261	465760.00	106150.00	6.40	43.28
SU60NE262	465880.00	106150.00	6.09	43.28
SU60NE263	466000.00	106140.00	6.09	43.28
SU60NE264	465800.00	106100.00	6.09	39.32
SU60NE265	465810.00	106020.00	6.09	34.14
SU60NE269	469630.00	105600.00	4.11	6.71
SU60NE441	469424.00	105401.00	7.45	3.30
SU60NE53	469200.00	105400.00	6.26	3.50
SU60NE7	469600.00	105900.00	6.26	4.82
SU60NW100	460220.00	109270.00	5.20	11.92
SU60NW101	460620.00	109060.00	9.00	14.28
SU60NW102	460820.00	109150.00	6.50	13.82
SU60NW103	461170.00	109240.00	6.00	14.25
SU60NW104	461500.00	109060.00	6.50	14.95
SU60NW105	461820.00	108880.00	6.00	16.08
SU60NW106	461950.00	108730.00	6.50	15.46
SU60NW107	462170.00	108430.00	4.50	16.23
SU60NW108	462690.00	108340.00	6.00	18.80
SU60NW109	462880.00	108340.00	8.45	21.81
SU60NW110	463200.00	108340.00	6.90	22.98
SU60NW111	463630.00	108370.00	6.85	22.56
SU60NW177	460050.00	109350.00	10.00	11.50
SU60NW178	460010.00	108750.00	16.70	17.00
SU60NW179	460320.00	108720.00	9.95	23.80
SU60NW180	460240.00	109040.00	8.15	19.75
SU60NW181	460500.00	109120.00	10.00	11.45
SU60NW182	460580.00	109380.00	6.80	18.97
SU60NW183	460620.00	109630.00	8.00	24.55
SU60NW184	460470.00	109730.00	10.00	14.55
SU60NW185	460230.00	109640.00	10.15	24.05
SU70NW1	470880.00	105630.00	5.18	4.00
SU70NW104	471120.00	105620.00	5.80	4.30

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SU70NW105	471190.00	105560.00	5.80	3.95
SU70NW106	471250.00	105580.00	4.90	3.63
SU70NW107	471340.00	105600.00	8.50	4.02
SU70NW108	471420.00	105590.00	5.20	4.30
SU70NW109	471110.00	105710.00	5.60	4.24
SU70NW110	471180.00	105720.00	4.57	4.16
SU70NW113	471460.00	105660.00	5.02	4.45
SU70NW114	471180.00	105810.00	9.14	4.15
SU70NW115	471240.00	105780.00	6.09	4.94
SU70NW116	471320.00	105770.00	6.00	4.57
SU70NW117	471400.00	105760.00	5.00	4.69
SU70NW132	471550.00	106870.00	12.90	13.00
SU70NW135	471800.00	106940.00	5.40	11.80
SU70NW137	471770.00	106970.00	9.00	11.25
SU70NW138	471830.00	106960.00	5.60	12.00
SU70NW144	470600.00	106060.00	20.00	5.06
SU70NW145	470630.00	106130.00	11.50	5.12
SU70NW146	470700.00	106050.00	7.50	5.20
SU70NW147	470770.00	106130.00	12.50	6.23
SU70NW148	470840.00	106040.00	11.00	4.13
SU70NW149	470900.00	106140.00	20.00	5.51
SU70NW150	470800.00	106200.00	12.50	7.19
SU70NW151	470920.00	106130.00	11.00	4.60
SU70NW155	471270.00	107160.00	4.00	7.80
SU70NW156	471310.00	107160.00	4.90	10.98
SU70NW157	471390.00	107140.00	5.48	12.77
SU70NW158	471480.00	107110.00	6.09	13.38
SU70NW159	471560.00	107090.00	6.09	13.63
SU70NW160	471630.00	107090.00	4.00	13.31
SU70NW161	471720.00	107130.00	4.00	13.51
SU70NW162	471810.00	107160.00	4.00	13.39
SU70NW163	471870.00	107190.00	5.02	14.32
SU70NW164	471920.00	107190.00	5.02	13.97
SU70NW210	471100.00	107000.00	21.30	9.33
SU70NW211	471100.00	106980.00	21.30	9.13
SU70NW219	470150.00	106550.00	4.00	13.00
SU70NW220	470140.00	106530.00	3.00	12.00

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SU70NW221	470190.00	106530.00	4.00	12.00
SU70NW222	470240.00	106550.00	4.00	12.00
SU70NW223	470260.00	106550.00	5.00	12.00
SU70NW224	470270.00	106570.00	4.00	12.00
SU70NW225	470280.00	106590.00	5.00	13.00
SU70NW226	470220.00	106560.00	5.00	12.00
SU70NW228	470140.00	106600.00	4.00	14.00
SU70NW229	470210.00	106610.00	4.00	14.00
SU70NW230	470250.00	106620.00	4.00	14.00
SU70NW231	470270.00	106610.00	4.00	13.00
SU70NW232	470770.00	105590.00	10.55	3.50
SU70NW233	470740.00	105530.00	5.00	3.50
SU70NW234	470730.00	105470.00	10.00	3.50
SU70NW235	470730.00	105440.00	10.00	3.50
SU70NW236	470710.00	105330.00	15.00	3.75
SU70NW237	470670.00	105320.00	15.00	3.12
SU70NW238	470680.00	105250.00	15.00	2.79
SU70NW248	470280.00	105900.00	15.24	1.22
SU70NW249	470280.00	105900.00	6.71	1.22
SU70NW318	471590.00	109750.00	10.00	26.70
SU70NW319	471350.00	109150.00	9.50	19.60
SU70NW320	471040.00	109230.00	10.00	39.36
SU70NW321	471200.00	109250.00	7.00	24.84
SU70NW322	471320.00	109260.00	11.70	22.75
SU70NW323	471600.00	109400.00	11.80	28.44
SU70NW324	471370.00	109300.00	10.00	23.62
SU70NW65	470500.00	108040.00	4.57	12.00
SU70NW66	470550.00	107920.00	4.26	12.00
SU70NW67	470800.00	107830.00	3.65	11.00
SU70NW68	470860.00	107720.00	4.26	10.00
SU70NW69	471070.00	107380.00	5.60	10.00
SU70NW70	471120.00	107290.00	12.70	10.60
SU70NW71	470830.00	106700.00	9.44	11.15
SU70NW72	470830.00	106580.00	7.00	8.09
SU70NW73	470840.00	106550.00	6.40	7.78
SU70NW74	470750.00	106570.00	5.50	6.13
SU70NW75	470710.00	106580.00	5.50	7.60

Name	Easting	Northing	Total depth (m)	Elevation (m OD)
SU70NW76	470640.00	106500.00	4.87	8.26
SU70NW77	470750.00	106330.00	7.30	5.66
SU70NW78	470750.00	106170.00	6.70	6.40
SU70NW81	470720.00	105660.00	19.00	3.48
SU70NW82	470700.00	105660.00	19.00	3.67
SU70NW83	470990.00	106830.00	7.60	9.89
SU70NW85	470320.00	106720.00	6.10	12.77
SU70NW86	470310.00	106680.00	6.10	12.16
SU70NW87	470310.00	106590.00	4.57	11.70
SU70NW88	470320.00	106490.00	4.57	9.23
SU70NW89	470330.00	106400.00	3.04	7.98
SU70NW90	470340.00	106330.00	3.04	10.40
SU70NW91	470350.00	106270.00	4.57	5.49
SU70NW92	470370.00	106250.00	6.10	4.51
SU70NW93	470380.00	106220.00	4.57	3.66
SU70NW94	470420.00	106170.00	4.57	2.47
SU70NW95	470470.00	106090.00	4.57	2.74
SU70NW96	470520.00	106020.00	6.10	3.90
SU70NW97	470570.00	105970.00	6.10	3.54
TP110	471855.08	108823.02	4.00	23.57
TP111	471855.04	108812.35	4.00	23.80
TP112	471863.93	108814.53	4.00	24.44
TP304	466618.00	106642.00	3.60	69.63
TP305	466628.00	106635.00	3.00	69.63
TP306	466618.20	106628.12	3.15	69.63
TP501	446510.00	121518.00	1.50	23.26
TP502	447064.00	121511.00	1.60	23.26
TP503	447052.00	121505.00	1.40	23.36
TP504	446214.96	121935.87	3.90	20.29
TP505	446204.72	121928.35	4.00	20.47
TP506	446213.69	121924.22	4.00	20.47
TP507	446168.35	122320.24	4.00	25.76
TP508	446183.72	122323.28	4.00	24.39
TP509	446175.63	122310.73	4.00	23.75
TPP01	470111.37	105888.44	4.00	4.23
TPP02	470115.68	106009.95	4.00	6.40
TPP05-DS	470306.51	106173.82	5.20	4.23

Name	Easting	Northing	Total depth (m)	Elevation (m OD)
WSW01	470649.51	105252.87	3.00	7.07
WSW02	470656.33	105238.48	6.45	6.53
WSW03	470696.00	105252.02	4.45	3.15
WSW04	470701.47	105269.57	0.80	3.28

Appendix 6 Palaeoenvironmental Potential Assessment

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
2B1500SA	0.00	0.15	Silt	Topsoil	None	No	N/A	No
2B1500SA	0.15	1.85	Sandy Clay	Clay	Low	No	N/A	No
2B1500SA	1.85	3.40	Sandy Gravelly Clays	Gravelly Clays	Moderate	No	N/A	No
2B1500SA	3.40	7.30	Sandy Gravel	Gravels	Low	No	N/A	No
2B1500SA	7.30	7.70	Sandy Gravel	Gravels	Low	No	N/A	No
2B1500SA	7.70	10.00	Chalk	Chalky Silts and Gravels	High	No	N/A	No
2D2500SA	0.00	0.20	Sandy Gravelly Silt	Topsoil	None	No	N/A	No
2D2501DS	0.00	0.35	Sandy Silt	Topsoil	None	No	N/A	No
2E3000RC	0.00	0.20	Sandy Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No
2E3000RC	1.20	1.70	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
2E3001RC	0.00	0.20	Sandy Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No
2E3001RC	1.20	1.50	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
2E3002RC	0.00	0.20	Sandy Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No
2E3002RC	1.20	1.50	AZCL	N/A	N/A	Yes	Arch & Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
2E3002RC	1.95	3.10	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
2E3002RC	14.30	14.55	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
2F3500DS	0.00	0.35	Sandy Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No
2F3500DS	0.35	0.55	Sandy Gravelly Silt	Made Ground	None	Yes	Arch & Geoarch	No
2F3500DS	0.55	1.20	Sandy Gravelly Clays	Made Ground	None	Yes	Arch & Geoarch	No
2F3500DS	1.20	1.50	Clay	Made Ground	None	Yes	Arch & Geoarch	No
2F3500DS	1.50	3.25	Clay	Head Deposits	Moderate	Yes	Arch & Geoarch	No
2F3501DS	0.00	0.30	Clay	Topsoil	None	Yes	Arch & Geoarch	No
2F3501DS	0.30	1.20	Sandy Gravelly Clays	Head Deposits	Moderate	Yes	Arch & Geoarch	No
2F3501DS	1.20	3.20	Clay	Head Deposits	Moderate	Yes	Arch & Geoarch	No
2F3502SA	0.00	0.30	Gravelly Sand	Topsoil	None	No	N/A	No
2F3502SA	0.30	0.95	Clayey Gravelly Sand	Possible River Terrace Deposits	Low	No	N/A	No
2F3502SA	0.95	1.40	Sandy Gravelly Clays	Possible River Terrace Deposits	Low	No	N/A	No
2F3502SA	1.40	2.00	Gravelly Clays	Possible River Terrace Deposits	Low	No	N/A	No
2F3502SA	2.00	2.50	Clay	Possible River Terrace Deposits	Low	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
2F3502SA	2.50	4.00	Chalk	Possible River Terrace Deposits	Low	No	N/A	No
2F3503SA	0.00	0.30	Gravelly Sand	Topsoil	None	Yes	Geoarch	No
2F3503SA	0.30	1.80	Clayey Gravelly Sand	River Terrace Deposits	Low	Yes	Geoarch	No
2F3503SA	1.80	2.00	Sandy Gravelly Clays	River Terrace Deposits	Low	Yes	Geoarch	No
2F3503SA	2.00	3.50	Sandy Gravelly Silt	River Terrace Deposits	Low	Yes	Geoarch	No
2F3503SA	3.50	5.30	Sandy Gravelly Silt	River Terrace Deposits	Moderate	Yes	Geoarch	No
2F3504DS	0.00	0.20	Clay	Topsoil	None	No	N/A	No
2F3504DS	0.20	0.90	Sandy Gravelly Clays	Head Deposits	Moderate	No	N/A	No
2F3504DS	0.90	1.20	Silty Gravelly Clays	Head Deposits	Moderate	No	N/A	No
2F3505DS	0.00	0.30	Sandy Clay	Topsoil	None	No	N/A	No
2F3505DS	0.30	1.20	Chalk	Head Deposits	Low	No	N/A	No
2F3512RC	0.00	0.35	Gravelly Clays	Topsoil	None	No	N/A	No
2F3512RC	0.35	1.20	Gravelly Clays	Head Deposits	Moderate	No	N/A	No
2F3512RC	1.20	1.70	Gravelly Clays	Head Deposits	Moderate	No	N/A	No
2F3512RC	3.50	4.70	AZCL	N/A	N/A	No	N/A	No
2F3512RC	8.00	8.50	AZCL	N/A	N/A	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
2F3512RC	13.25	14.20	Chalk	N/A	N/A	No	N/A	No
2F3513DS	0.00	0.20	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
2F3513DS	0.20	0.60	Sandy Gravelly Clays	Head Deposits	Low	No	N/A	No
2F3513DS	0.60	1.20	Chalk	Head Deposits	Moderate	No	N/A	No
2F3514DS	0.00	0.25	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
2F3514DS	0.25	0.90	Sandy Gravelly Clays	Head Deposits	Moderate	No	N/A	No
2F3514DS	0.90	1.20	Sandy Gravelly Silt	Head Deposits	Moderate	No	N/A	No
2F3515DS	0.00	0.30	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
2F3515DS	0.30	0.60	Sandy Gravelly Clays	Head Deposits	Low	No	N/A	No
2F3515DS	0.60	1.20	Clayey Gravelly Silt	Head Deposits	Moderate	No	N/A	No
2F3515DS	1.20	1.45	Gravelly Clays	Head Deposits	Moderate	No	N/A	No
2F3537DS	0.00	0.20	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
2F3537DS	0.20	0.60	Sandy Gravelly Clays	Head Deposits	Low	No	N/A	No
2F3537DS	0.60	1.20	Chalk	Head Deposits	Low	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
2G4000SA	0.00	0.05	Sandy Clay	Topsoil	None	Yes	Geoarch	No
2G4000SA	0.05	0.30	Sandy Clay	River Terrace Deposits	Low	Yes	Geoarch	No
2G4000SA	0.30	1.30	Sandy Gravelly Clays	River Terrace Deposits	Low	Yes	Geoarch	No
2G4000SA	1.30	2.50	Sandy Gravelly Clays	River Terrace Deposits	Low	Yes	Geoarch	No
2G4000SA	2.50	4.50	Clay	River Terrace Deposits	Low	Yes	Geoarch	No
2G4001SA	0.00	0.25	Clayey Sand	Topsoil	None	Yes	Geoarch	No
2G4001SA	0.25	0.70	Gravelly Sand	Alluvium	Low	Yes	Geoarch	No
2G4001SA	0.70	3.50	Clay	Alluvium	Low	Yes	Geoarch	No
2G4002DS	0.00	0.40	Sandy Gravelly Clays	Made Ground	None	Yes	Geoarch	No
2G4002DS	0.40	0.55	Sandy Gravelly Clays	Head Deposits	Low	Yes	Geoarch	No
2G4002DS	0.55	1.20	Sandy Clay	Head Deposits	Low	Yes	Geoarch	No
2G4003DS	0.00	0.40	Sandy Gravelly Clays	Made Ground	None	Yes	Geoarch	No
2G4003DS	0.40	0.65	Sandy Gravelly Clays	Head Deposits	Low	Yes	Geoarch	No
2G4003DS	0.65	1.20	Sandy Clay	Head Deposits	Low	Yes	Geoarch	No
2G4004DS	0.00	0.40	Sandy Gravelly Clays	Made Ground	None	Yes	Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
2G4004DS	0.40	0.65	Clayey Sandy Gravel	Head Deposits	Low	Yes	Geoarch	No
2G4004DS	0.65	1.20	Sandy Clay	Head Deposits	Low	Yes	Geoarch	No
2G4004DS	1.20	1.45	Sandy Clay	Head Deposits	Low	Yes	Geoarch	No
2H4500DR	0.00	0.05	Sandy Clay	Topsoil	None	No	N/A	No
2H4500DR	0.05	0.25	Clayey Sand	Topsoil	None	No	N/A	No
2H4500DR	0.25	0.80	Sandy Gravelly Clays	Head Deposits	Low	No	N/A	No
2H4500DR	5.20	6.00	AZCL	N/A	N/A	No	N/A	No
2H4500DR	7.50	7.90	AZCL	N/A	N/A	No	N/A	No
2H4501DR	0.00	0.42	Sandy Clay	Topsoil	None	No	N/A	No
2H4501DR	5.70	9.60	AZCL	N/A	N/A	No	N/A	No
2H4501DR	9.70	10.60	AZCL	N/A	N/A	No	N/A	No
2H4501DR	10.70	11.75	AZCL	N/A	N/A	No	N/A	No
2H4502DS	0.00	0.28	Sand	Topsoil	None	No	N/A	No
2H4503DS	0.00	0.15	Sand	Topsoil	None	No	N/A	No
2H4503DS	0.15	1.20	Sandy Clay	Possible Bedrock	None	No	N/A	No
2H4503DS	1.20	2.90	Silty Clay	Possible Bedrock	None	No	N/A	No
2H4503DS	2.90	3.65	ACL	N/A	N/A	No	N/A	No
2H4503DS	3.65	3.95	Silty Clay	Possible Bedrock	None	No	N/A	No
2K5500SR	0.00	0.30	Clay	Made Ground	None	Yes	Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
2K5500SR	0.30	0.70	Clay	Made Ground	None	Yes	Geoarch	No
2K5500SR	0.70	3.10	Gravelly Clays	River Terrace Deposits	Low	Yes	Geoarch	No
2K5500SR	3.10	4.10	Gravelly Clays	River Terrace Deposits	Low	Yes	Geoarch	No
2K5500SR	4.10	4.90	Clay	River Terrace Deposits	Low	Yes	Geoarch	No
2K5501SR	0.00	0.12	Sandy Clay	Topsoil	None	Yes	Geoarch	No
2K5501SR	0.12	0.45	Gravelly Clays	River Terrace Deposits	Low	Yes	Geoarch	No
2K5501SR	0.45	1.70	Clayey Gravel	River Terrace Deposits	Low	Yes	Geoarch	No
2K5502DS	0.00	0.15	Sandy Gravelly Silt	Topsoil	None	No	N/A	No
2K5502DS	0.15	0.60	Made Ground	Made Ground	None	No	N/A	No
2K5502DS	0.60	0.70	Sandy Silt	Alluvium	Low	No	N/A	No
2K5503DS	0.00	0.18	Sandy Silt	Topsoil	None	No	N/A	No
2K5503DS	0.18	0.90	Sandy Gravelly Clays	Alluvium	Low	No	N/A	No
2K5534DS	0.00	0.17	Sandy Gravelly Silt	Topsoil	None	No	N/A	No
2K5534DS	0.17	0.70	Sandy Gravelly Clays	Alluvium	Low	No	N/A	No
2K5535DS	0.00	0.15	Sandy Silt	Topsoil	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
2K5535DS	0.15	0.70	Sandy Gravelly Clays	Alluvium	Low	No	N/A	No
2L6000TP	0.00	0.15	Clay	Made Ground	None	Yes	Arch	No
2L6001TP	0.00	0.15	Sandy Gravelly Clays	Topsoil	None	Yes	Arch	No
2L6001TP	0.15	0.16	Sandy Clay	Topsoil	None	Yes	Arch	No
2L6002SA	0.00	0.25	Sandy Gravelly Clays	Made Ground	None	Yes	Geoarch	No
2L6002SA	0.25	1.50	Sandy Clay	Head Deposits	Low	Yes	Geoarch	No
2L6003SA	0.00	0.15	Clay	Made Ground	None	Yes	Arch & Geoarch	No
2L6003SA	0.15	3.55	Clay	Head Deposits	Low	Yes	Arch & Geoarch	No
2L6004TP	0.00	0.30	Gravelly Clays	Made Ground	None	Yes	Arch	No
2L6004TP	0.30	1.80	Clay	Head Deposits	Low	Yes	Arch	No
2L6005SA	0.00	0.70	Gravelly Clays	Made Ground	None	Yes	Arch & Geoarch	No
2L6005SA	0.70	2.40	Sandy Clay	Head Deposits	Low	Yes	Arch & Geoarch	No
2L6006TP	0.00	0.30	Clay	Made Ground	None	Yes	Arch	No
2L6006TP	0.30	1.40	Clay	Head Deposits	Low	Yes	Arch	No
2L6007DR	0.00	0.20	Sandy Clay	Topsoil	None	Yes	Arch & Geoarch	No
2L6007DR	0.20	0.50	Sandy Clay	Alluvium	Low	Yes	Arch & Geoarch	No
2L6007DR	0.50	1.10	Gravelly Clays	Alluvium	Low	Yes	Arch & Geoarch	No
2L6007DR	1.10	1.20	Sandy Clay	Alluvium	Low	Yes	Arch & Geoarch	No
2L6007DR	1.20	2.00	Clay	Alluvium	Low	Yes	Arch & Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
2L6008DR	0.00	0.30	Clay	Topsoil	None	Yes	Arch & Geoarch	No
2L6008DR	0.30	1.20	Clay	Alluvium	Low	Yes	Arch & Geoarch	No
2L6008DR	1.20	1.80	Clay	Alluvium	Low	Yes	Arch & Geoarch	No
2L6008DR	1.80	2.75	Clayey Gravel	Alluvium	Low	Yes	Arch & Geoarch	No
2L6008DR	14.70	15.20	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
2L6009DR	0.00	0.40	Clay	Made Ground	None	Yes	Arch & Geoarch	No
2L6009DR	0.40	0.70	Sandy Gravelly Clays	Alluvium	Low	Yes	Arch & Geoarch	No
2L6009DR	0.70	0.90	Clayey Silty Sandy Gravel	Alluvium	Low	Yes	Arch & Geoarch	No
2L6009DR	0.90	2.55	Clay	Alluvium	Low	Yes	Arch & Geoarch	No
2L6009DR	7.00	7.20	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
2L6009DR	8.20	8.30	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
2L6009DR	11.50	11.60	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
2L6009DR	19.00	19.20	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
2L6010DR	0.00	0.40	Sandy Clay	Topsoil	None	Yes	Arch & Geoarch	No
2L6010DR	0.40	0.66	Gravelly Clays	Alluvium	Low	Yes	Arch & Geoarch	No
2L6010DR	0.66	0.68	Gravel	Alluvium	Low	Yes	Arch & Geoarch	No
2L6010DR	0.68	2.40	Gravelly Clays	Alluvium	Low	Yes	Arch & Geoarch	No
2L6010DR	2.40	3.90	Sandy Gravelly Clays	Alluvium	Low	Yes	Arch & Geoarch	No
2L6011SR	0.00	0.50	Clay	Topsoil	None	Yes	Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
2L6011SR	0.50	2.20	Clayey Gravel	River Terrace Deposits	Low	Yes	Geoarch	No
2L6011SR	2.20	2.40	Clay	River Terrace Deposits	Low	Yes	Geoarch	No
2L6012SR	0.00	0.15	Sand	Topsoil	None	No	N/A	No
2L6012SR	0.15	0.45	Clayey Gravelly Sand	River Terrace Deposits	Low	No	N/A	No
2L6012SR	0.45	0.90	Sandy Gravelly Clays	River Terrace Deposits	Low	No	N/A	No
2L6012SR	0.90	2.40	Gravelly Clays	River Terrace Deposits	Low	No	N/A	No
2L6012SR	2.40	3.00	Clay	River Terrace Deposits	Low	No	N/A	No
2L6012SR	15.80	16.15	Clay	N/A	N/A	No	N/A	No
2M6507SA	0.00	0.30	Sand	Topsoil	None	Yes	Geoarch	No
2M6507SA	0.30	1.90	Clayey Sand	Alluvium	Low	Yes	Geoarch	No
2M6507SA	1.90	5.70	Clayey Gravelly Sand	River Terrace Deposits	Low	Yes	Geoarch	No
2M6508SA	0.00	0.30	Clay	Topsoil	None	No	N/A	No
2M6508SA	0.30	2.55	Clay	Alluvium	Low	No	N/A	No
2M6508SA	2.55	4.50	Sandy Gravelly Clays	River Terrace Deposits	Low	No	N/A	No
3E3019DS	0.00	0.35	Clay	Topsoil	None	Yes	Arch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3E3019DS	0.35	0.95	Clay	Head Deposits	Low	Yes	Arch	No
3E3019DS	0.95	1.20	Silt	Head Deposits	Low	Yes	Arch	No
3E3020DS	0.00	0.25	Gravelly Clays	Topsoil	None	No	N/A	No
3E3021DS	0.00	0.40	Sandy Clay	Topsoil	None	No	N/A	No
3E3021DS	0.40	0.90	Gravelly Clays	Head Deposits	Moderate	No	N/A	No
3E3021DS	0.90	1.40	Gravelly Clays	Head Deposits	Moderate	No	N/A	No
3E3022HP	0.00	0.55	Gravelly Clays	Topsoil	None	Yes	Arch	No
3E3022HP	0.55	0.90	Clay	Head Deposits	Low	Yes	Arch	No
3E3023TP	0.00	0.30	Gravelly Clays	Topsoil	None	No	N/A	No
3E3023TP	0.30	1.70	Sandy Gravelly Clays	Made Ground	None	No	N/A	No
3E3023TP	1.70	4.00	Gravelly Silty Clay	Made Ground	None	No	N/A	No
3E3028HP	0.00	0.20	Sandy Clay	Topsoil	None	No	N/A	No
3E3034HP	0.00	1.00	Clay	Head Deposits	Low	Yes	Arch & Geoarch	No
3E3034HP	1.00	1.10	Gravelly Clays	Head Deposits	Low	Yes	Arch & Geoarch	No
3E3035DS	0.00	0.40	Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No
3E3036DS	0.00	0.40	Silt	Topsoil	None	No	N/A	No
3E3036DS	0.40	0.90	Gravelly Claysey Silt	Head Deposits	Low	No	N/A	No
3E3038HP	0.00	0.30	Silt	Topsoil	None	No	N/A	No
3E3100DS	0.00	0.40	Gravelly Clays	Topsoil	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3E3101TP	0.00	0.35	Clay	Topsoil	None	No	N/A	No
3E3102TP	0.00	0.25	Clay	Topsoil	None	No	N/A	No
3E3102TP	0.25	0.65	Clay	Possible Head Deposits	Low	No	N/A	No
3E3102TP	0.65	1.60	Gravelly Clays	Possible Head Deposits	Low	No	N/A	No
3E3103HP	0.00	0.35	Gravelly Silt	Topsoil	None	No	N/A	No
3E3103HP	0.35	0.60	Gravelly Silt	Head Deposits	Low	No	N/A	No
3E3103HP	0.60	1.20	Clay	Possible Bedrock	None	No	N/A	No
3E3104HP	0.00	0.30	Gravelly Silt	Topsoil	None	No	N/A	No
3E3104HP	0.30	0.80	Gravelly Silt	Head Deposits	Low	No	N/A	No
3E3104HP	0.80	1.20	Clay	Possible Bedrock	None	No	N/A	No
3E3105HP	0.00	0.30	Gravelly Silt	Topsoil	None	No	N/A	No
3E3105HP	0.30	0.80	Gravelly Silt	Head Deposits	Low	No	N/A	No
3E3105HP	0.80	1.20	Clay	Possible Bedrock	None	No	N/A	No
3E3106TP	0.00	0.25	Clay	Topsoil	None	Yes	Arch	No
3E3106TP	0.25	1.50	Gravelly Clays	Head Deposits	Moderate	Yes	Arch	No
3E3107HP	0.00	0.60	Sandy Clay	Topsoil	None	Yes	Arch	No
3E3107HP	0.60	0.80	Clay	Head Deposits	Moderate	Yes	Arch	No
3E3107HP	0.80	1.10	Sandy Clay	Head Deposits	Moderate	Yes	Arch	No
3E3108TP	0.00	0.30	Clay	Topsoil	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3E3109HP	0.00	0.35	Clayey Sand	Topsoil	None	Yes	Arch	No
3E3109HP	0.35	1.20	Gravelly Silty Sand	Head Deposits	Moderate	Yes	Arch	No
3E3110DS	0.00	0.35	Sandy Clay	Topsoil	None	No	N/A	No
3E3110DS	0.35	0.45	Gravelly Sandy Clay	Head Deposits	Low	No	N/A	No
3E3110DS	0.45	0.80	Gravelly Silty Clay	Head Deposits	Low	No	N/A	No
3E3111HP	0.00	0.25	Gravelly Claysey Sand	Topsoil	None	Yes	Geoarch	No
3E3111HP	0.25	1.20	Gravelly Sandy Clay	Head Deposits	Moderate	Yes	Geoarch	No
3E3112TP	0.00	0.35	Clay	Topsoil	None	No	N/A	No
3E3113HP	0.00	0.40	Sandy Clay	Topsoil	None	No	N/A	No
3E3113HP	0.40	0.55	Gravelly Clays	Head Deposits	Low	No	N/A	No
3E3114DS	0.00	0.30	Sandy Clay	Topsoil	None	No	N/A	No
3E3115DS	0.00	0.35	Gravelly Sandy Clay	Made Ground	None	No	N/A	No
3E3115DS	0.35	0.70	Sandy Silt	Made Ground	None	No	N/A	No
3E3115DS	0.70	1.20	Gravelly Silt	Possible Made Ground	None	No	N/A	No
3E3115DS	1.20	1.75	Gravelly Silt	Possible Made Ground	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3E3115DS	1.75	2.60	Sandy Silty Gravel	Possible Made Ground	None	No	N/A	No
3E3115DS	2.60	3.50	Clay	Possible Made Ground	None	No	N/A	No
3E3115DS	3.50	3.80	Clay	Possible Made Ground	None	No	N/A	No
3E3115DS	3.80	4.90	Sandy Clay	Possible Made Ground	None	No	N/A	No
3E3115DS	4.90	6.45	Sandy Silty Gravel	Possible Made Ground	None	No	N/A	No
3E3117DS	0.00	0.30	Clay	Topsoil	None	No	N/A	No
3E3117DS	0.30	1.20	Clay	Made Ground	None	No	N/A	No
3E3119HP	0.00	0.25	Clay	Topsoil	None	Yes	Arch	No
3E3119HP	0.25	1.10	Sandy Clay	Head Deposits	Moderate	Yes	Arch	No
3E7501IT	0.00	0.30	Sandy Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No
3E7502IT	0.00	0.30	Sandy Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No
3E7503IT	0.00	0.30	Sandy Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No
3E7504IT	0.00	0.30	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
3E7505IT	0.00	0.30	Sandy Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3E7506IT	0.00	0.30	Sandy Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No
3E7507IT	0.00	0.30	Sandy Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No
3E7508IT	0.00	0.25	Silty Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No
3F3519HP	0.00	0.25	Clay	Topsoil	None	No	N/A	No
3F3519HP	0.25	0.35	Clay	Head Deposits	Low	No	N/A	No
3F3521HP	0.00	0.25	Sandy Clay	Topsoil	None	Yes	Arch & Geoarch	No
3F3521HP	0.25	0.90	Silty Clay	Head Deposits	Low	Yes	Arch & Geoarch	No
3F3521HP	0.90	1.20	Sandy Clay	Head Deposits	Moderate	Yes	Arch & Geoarch	No
3F3523DR	0.00	0.28	Sandy Clay	Topsoil	None	Yes	Geoarch	No
3F3523DR	0.28	0.93	Sandy Clay	Head Deposits	Low	Yes	Geoarch	No
3F3523DR	0.93	1.20	Gravelly Clays	Head Deposits	Low	Yes	Geoarch	No
3F3523DR	1.20	3.00	Gravel	Possible River Terrace Deposits	Low	Yes	Geoarch	No
3F3523DR	3.00	5.25	No Recovery	N/A	N/A	Yes	Geoarch	No
3F3523DR	5.25	6.25	Clay	Possible River Terrace Deposits	Low	Yes	Geoarch	No
3F3523DR	6.25	6.75	Gravel	Possible River Terrace Deposits	Low	Yes	Geoarch	No
3F3523DR	9.25	10.75	No Recovery	N/A	N/A	Yes	Geoarch	No
3F3524DR	0.00	0.35	Clay	Topsoil	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3F3524DR	0.35	1.00	Clay	Head Deposits	Moderate	No	N/A	No
3F3524DR	1.00	1.20	Sandy Clay	Head Deposits	Moderate	No	N/A	No
3F3524DR	1.20	1.55	Gravelly Clays	Head Deposits	Moderate	No	N/A	No
3F3524DR	1.55	5.50	Silty Gravel	Head Deposits	Moderate	No	N/A	No
3F3524DR	5.50	7.85	Gravelly Silt	Possible Head Deposits	Moderate	No	N/A	No
3F3601HP	0.00	0.15	Clay	Topsoil	None	No	N/A	No
3F3601HP	0.15	0.55	Gravelly Clays	Head Deposits	Low	No	N/A	No
3F3601HP	0.55	1.20	Gravelly Clays	Head Deposits	Moderate	No	N/A	No
3F3602HP	0.00	0.30	Sandy Clay	Topsoil	None	Yes	Geoarch	No
3F3602HP	0.30	0.75	Sandy Clay	Head Deposits	Moderate	Yes	Geoarch	No
3F3602HP	0.75	0.85	Clay	Head Deposits	Moderate	Yes	Geoarch	No
3F3602HP	0.85	1.00	Gravelly Sandy Clay	Head Deposits	Moderate	Yes	Geoarch	No
3F7509IT	0.00	0.30	Gravelly Clays	Topsoil	None	Yes	Geoarch	No
3F7509IT	0.30	2.50	Gravelly Clays	Head Deposits	Moderate	Yes	Geoarch	No
3F7510IT	0.00	0.30	Gravelly Clays	Topsoil	None	Yes	Geoarch	No
3F7510IT	0.30	2.50	Gravelly Clays	Head Deposits	Moderate	Yes	Geoarch	No
3F7512IT	0.00	0.30	Gravelly Clays	Topsoil	None	Yes	Geoarch	No
3F7512IT	0.30	0.80	Gravelly Clays	Head Deposits	Low	Yes	Geoarch	No
3F7513IT	0.00	1.10	Clay	Head Deposits	Low	Yes	Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3G4022DS	0.00	0.50	Gravelly Clays	Topsoil	None	No	N/A	No
3G4022DS	0.50	1.00	Gravelly Clays	Head Deposits	Low	No	N/A	No
3G4022DS	1.00	1.50	Clay	Head Deposits	Low	No	N/A	No
3G4022DS	1.50	1.85	Sandy Gravel	River Terrace Deposits	Low	No	N/A	No
3G4022DS	1.85	2.30	Sandy Clay	River Terrace Deposits	Low	No	N/A	No
3G4022DS	2.30	3.60	Sandy Clayey Gravel	River Terrace Deposits	Low	No	N/A	No
3G4023HP	0.00	0.30	Silt	Topsoil	None	Yes	Arch	No
3G4023HP	0.30	0.60	Gravelly Sandy Clay	Possible River Terrace Deposits	Low	Yes	Arch	No
3G4024DS	0.00	0.30	Silt	Topsoil	None	Yes	Arch & Geoarch	No
3G4024DS	0.30	1.70	Sandy Gravel	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
3G4037DS	0.00	0.20	Sandy Gravel	Topsoil	None	No	N/A	No
3G4037DS	0.20	0.70	Sandy Clayey Gravel	Made Ground	None	No	N/A	No
3G4037DS	0.70	0.95	Sandy Clayey Gravel	Made Ground	None	No	N/A	No
3G4037DS	0.95	1.20	Sandy Gravelly Clays	Made Ground	None	No	N/A	No
3G4037DS	1.20	1.80	Slightly Gravelly Clays	Possible Head Deposits	Low	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3G4037DS	1.80	3.65	Sandy Gravelly Clays	Possible River Terrace Deposits	Low	No	N/A	No
3G4038DS	0.00	0.30	Gravel	Topsoil	None	No	N/A	No
3G4038DS	0.30	0.95	Gravelly Clays	Possible Head Deposits	Low	No	N/A	No
3G4038DS	0.95	1.30	Gravelly Clays	Possible Head Deposits	Low	No	N/A	No
3G4038DS	1.30	1.60	Sandy Clayey Gravel	Possible River Terrace Deposits	Low	No	N/A	No
3G4038DS	1.60	2.10	Sandy Gravelly Clays	Possible River Terrace Deposits	Low	No	N/A	No
3G4038DS	2.10	3.30	Sandy Gravelly Clays	Possible River Terrace Deposits	Low	No	N/A	No
3G4102SA	0.00	0.35	Sandy Clay	Topsoil	None	Yes	Arch & Geoarch	No
3G4102SA	0.35	0.85	Sandy Gravelly Clays	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
3G4102SA	0.85	3.40	Sandy Gravelly Clays	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
3G4102SA	3.40	4.00	Sandy Clay	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
3G4105SA	0.00	0.35	Clay	Topsoil	None	Yes	Arch & Geoarch	No
3G4105SA	0.35	0.45	Gravelly Clays	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
3G4105SA	0.45	0.80	Gravel	River Terrace Deposits	Low	Yes	Arch & Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3G4105SA	0.80	0.95	Sandy Clayey Gravel	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
3G4105SA	0.95	1.20	Gravel	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
3G4105SA	1.20	2.50	Gravelly Sand	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
3G4106SA	0.00	0.30	Silty Clay	Topsoil	None	Yes	Arch & Geoarch	No
3G4106SA	0.30	0.80	Gravelly Clays	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
3G4106SA	0.80	1.80	Gravelly Clays	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
3G4106SA	1.80	2.30	Gravelly Sandy Clay	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
3G4106SA	2.30	3.80	Sandy Gravel	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
3G7525IT	0.00	0.35	Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No
3G7525IT	0.35	0.80	Sandy Clayey Gravel	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
3G7525IT	0.80	1.50	Sandy Silty Gravel	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
3G7530IT	0.00	0.35	Sandy Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No
3G7530IT	0.35	2.50	Sandy Silty Gravel	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
3H4507HP	0.00	0.35	Clay	Topsoil	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3H4507HP	0.35	1.20	Clay	Possible Bedrock	None	No	N/A	No
3H4511HP	0.00	0.25	Clay	Topsoil	None	No	N/A	No
3H4511HP	0.25	1.20	Clay	Possible Bedrock	None	No	N/A	No
3H4513HP	0.00	0.40	Clay	Topsoil	None	No	N/A	No
3H4513HP	0.40	1.20	Sandy Clay	Possible Bedrock	None	No	N/A	No
3H4514HP	0.00	0.30	Gravelly Sandy Silt	Topsoil	None	Yes	Geoarch	No
3H4514HP	0.30	0.60	Clayey Gravelly Sand	Head Deposits	Low	Yes	Geoarch	No
3H4514HP	0.60	1.20	Sandy Gravelly Clays	Head Deposits	Low	Yes	Geoarch	No
3H4515HP	0.00	0.25	Sandy Gravelly Silt	Topsoil	None	No	N/A	No
3H4517SA	0.00	0.25	Silty Sand	Topsoil	None	No	N/A	No
3H4600SA	0.00	0.40	Silty Clay	Topsoil	None	Yes	Geoarch	No
3H4600SA	0.40	0.80	Gravelly Silty Clay	River Terrace Deposits	Low	Yes	Geoarch	No
3H4600SA	0.80	1.00	Clayey Gravel	River Terrace Deposits	Low	Yes	Geoarch	No
3H4600SA	1.00	1.70	Sandy Clayey Gravel	River Terrace Deposits	Low	Yes	Geoarch	No
3H4600SA	1.70	3.00	Silty Clay	Possible River Terrace Deposits	Low	Yes	Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3H4602HP	0.00	0.25	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
3H4602HP	0.25	0.95	Sandy Clayey Gravel	River Terrace Deposits	Low	No	N/A	No
3H4602HP	0.95	1.10	Gravelly Claysey Sand	River Terrace Deposits	Low	No	N/A	No
3H4603HP	0.00	0.30	Sandy Gravelly Silt	Topsoil	None	No	N/A	No
3H4603HP	0.30	0.75	Gravelly Sand	Possible Head Deposits	Low	No	N/A	No
3H4606HP	0.00	0.40	Made Ground	Made Ground	None	No	N/A	No
3J5002SA	0.00	0.20	Sand	Topsoil	None	No	N/A	No
3J5003HP	0.00	0.35	Silty Sand	Topsoil	None	No	N/A	No
3J5003HP	0.35	0.90	Sandy Clay	Head Deposits	Low	No	N/A	No
3J5004DS	0.00	0.35	Clay	Topsoil	None	No	N/A	No
3J5004DS	0.35	2.00	Sandy Gravelly Clays	Made Ground	None	No	N/A	No
3J5004DS	2.00	5.00	Sandy Clay	Head Deposits	Moderate	No	N/A	No
3J5007DS	0.00	0.75	Gravelly Silt	Made Ground	None	No	N/A	No
3J5007DS	0.75	2.40	Sandy Gravelly Clays	Made Ground	None	No	N/A	No
3J5007DS	2.40	3.60	Gravelly Clays	Made Ground	None	No	N/A	No
3J5007DS	3.60	4.30	Sandy Clay	Head Deposits	Moderate	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3J5007DS	4.30	6.45	Sandy Silty Clay	Head Deposits	Moderate	No	N/A	No
3J5012HP	0.00	0.30	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
3J5013HP	0.00	0.30	Sandy Silt	Topsoil	None	No	N/A	No
3J5014TP	0.00	0.30	Gravelly Clays	Made Ground	None	No	N/A	No
3J5014TP	0.30	0.45	Clay	Made Ground	None	No	N/A	No
3J5014TP	0.45	0.60	Clayey Gravelly Sand	Made Ground	None	No	N/A	No
3J5014TP	0.60	1.20	Sand	Made Ground	None	No	N/A	No
3J5014TP	1.20	3.00	Landfill	Made Ground	None	No	N/A	No
3J5014TP	3.00	3.80	Silty Sand	Made Ground	None	No	N/A	No
3J5015SA	0.00	0.30	Gravelly Silty Sand	Made Ground	None	No	N/A	No
3J5015SA	0.30	0.60	Gravelly Silty Clay	Made Ground	None	No	N/A	No
3J5015SA	0.60	1.00	Silty Clay	Made Ground	None	No	N/A	No
3J5015SA	1.00	1.20	Silty Clay	Made Ground	None	No	N/A	No
3J5015SA	1.20	4.80	Silty Clay	Made Ground	None	No	N/A	No
3J5015SA	4.80	6.00	Sand	Made Ground	None	No	N/A	No
3J5016TP	0.00	0.25	Clayey Gravelly Sand	Made Ground	None	No	N/A	No
3J5016TP	0.25	0.50	Clay	Made Ground	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3J5016TP	0.50	0.60	Clay	Made Ground	None	No	N/A	No
3J5016TP	0.60	0.70	Clay	Made Ground	None	No	N/A	No
3J5016TP	0.70	1.30	Silty Clay	Made Ground	None	No	N/A	No
3J5016TP	1.30	1.40	Clay	Made Ground	None	No	N/A	No
3J5016TP	1.40	3.30	Landfill	Made Ground	None	No	N/A	No
3J5016TP	3.30	3.80	Sand	Possible Bedrock	None	No	N/A	No
3J5017HP	0.00	0.35	Silty Sand	Topsoil	None	Yes	Geoarch	No
3J5023HP	0.00	0.30	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
3J5023HP	0.30	1.20	Sandy Clay	Possible Bedrock	None	No	N/A	No
3J5024HP	0.00	0.30	Sandy Gravelly Silt	Topsoil	None	Yes	Geoarch	No
3J5024HP	0.30	1.20	Sandy Gravelly Clays	Possible Head Deposits	Low	Yes	Geoarch	No
3J5025HP	0.00	0.35	Sandy Clay	Topsoil	None	No	N/A	No
3J5026HP	0.00	0.40	Made Ground	Made Ground	None	No	N/A	No
3J5027DS	0.00	0.30	Silt	Topsoil	None	No	N/A	No
3J5027DS	0.30	4.50	Silty Sand	Possible Bedrock	None	No	N/A	No
3J5028DS	0.00	0.30	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
3J5028DS	0.30	1.30	Silty Sandy Clay	Possible Bedrock	None	No	N/A	No
3J5028DS	1.30	1.90	Silty Sandy Clay	Possible Bedrock	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3J5029DS	0.00	0.30	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
3J5101HP	0.00	0.25	Sandy Clay	Topsoil	None	No	N/A	No
3J5102HP	0.00	0.25	Sandy Clay	Topsoil	None	No	N/A	No
3K5511DS	0.00	1.60	Sandy Gravelly Clays	Made Ground	None	Yes	Geoarch	No
3K5511DS	1.60	5.15	Sandy Clay	Possible Bedrock	None	Yes	Geoarch	No
3K5513HP	0.00	0.20	Clay	Topsoil	None	No	N/A	No
3K5513HP	0.20	1.20	Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5515HP	0.00	0.30	Sandy Gravelly Silt	Topsoil	None	No	N/A	No
3K5515HP	0.30	0.70	Silty Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5515HP	0.70	1.20	Silty Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5520CT	0.00	0.20	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
3K5520CT	0.20	1.00	Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5520CT-A	0.00	0.30	Made Ground	Made Ground	None	No	N/A	No
3K5520CT-A	0.30	1.20	Silty Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5521CT	0.00	0.25	Made Ground	Made Ground	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3K5521CT	0.25	0.50	Sandy Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5521CT	0.50	1.20	Sandy Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5521CT-A	0.00	0.25	Made Ground	Made Ground	None	No	N/A	No
3K5521CT-A	0.25	0.50	Sandy Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5521CT-A	0.50	1.20	Sandy Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5524CT	0.00	0.20	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
3K5524CT	0.20	1.00	Sandy Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5524CT	1.00	1.20	Sandy Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5524CT-A	0.00	0.20	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
3K5524CT-A	0.20	1.00	Sandy Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5524CT-A	1.00	1.20	Sandy Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5525DR	0.00	0.20	Sandy Gravelly Silt	Topsoil	None	No	N/A	No
3K5525DR	0.20	0.60	Silty Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3K5525DR	0.60	1.20	Silty Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5525DR	1.20	3.00	Silty Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5525DR	24.90	25.25	AZCL	N/A	N/A	No	N/A	No
3K5525DR	26.40	26.74	AZCL	N/A	N/A	No	N/A	No
3K5527DR	0.00	0.15	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
3K5527DR	0.15	0.70	Silty Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5527DR	0.70	1.20	Silty Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5527DR	1.20	2.50	Silty Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5529HP	0.00	0.30	Sandy Gravelly Silt	Topsoil	None	No	N/A	No
3K5530HP	0.00	0.30	Sandy Clay	Topsoil	None	No	N/A	No
3K5531DS	0.00	0.15	Clay	Topsoil	None	No	N/A	No
3K5531DS	0.15	0.90	Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5531DS	0.90	1.65	Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5540CT	0.00	0.15	Silty Sandy Clay	Topsoil	None	No	N/A	No
3K5540CT	0.15	0.40	Made Ground	Made Ground	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3K5540CT-A	0.00	0.20	Silty Sandy Clay	Topsoil	None	No	N/A	No
3K5540CT-A	0.20	0.50	Sandy Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5540CT-A	0.50	1.20	Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5541CT	0.00	0.15	Silty Sandy Clay	Topsoil	None	No	N/A	No
3K5541CT	0.15	0.40	Sandy Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5541CT	0.40	1.20	Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5541CT-A	0.00	0.15	Silty Sandy Clay	Topsoil	None	No	N/A	No
3K5541CT-A	0.15	0.40	Sandy Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5541CT-A	0.40	1.20	Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5604HP	0.00	0.25	Sandy Clay	Topsoil	None	Yes	Arch & Geoarch	No
3K5604HP	0.25	1.20	Sandy Clay	Possible Bedrock (Lambeth Group)	None	Yes	Arch & Geoarch	No
3K5606SA	0.00	0.15	Sandy Clay	Topsoil	None	No	N/A	No
3K5606SA	0.15	0.80	Silty Gravelly Clays	Alluvium	Low	No	N/A	No
3K5606SA	0.80	2.00	Silty Sandy Clay	Possible Bedrock	None	No	N/A	No
3K5607HP	0.00	0.30	Sandy Gravelly Silt	Topsoil	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3K5607HP	0.30	0.40	Silty Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5607HP	0.40	0.60	Silty Sandy Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5607HP	0.60	0.80	Silty Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5608HP	0.00	0.35	Sandy Gravelly Silt	Topsoil	None	No	N/A	No
3K5608HP	0.35	1.20	Sandy Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5609HP	0.00	0.30	Sandy Clay	Topsoil	None	No	N/A	No
3K5609HP	0.30	1.20	Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5610HP	0.00	0.30	Sandy Clay	Topsoil	None	No	N/A	No
3K5610HP	0.30	0.90	Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K5610HP	0.90	1.20	Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K7541IT	0.00	0.25	Sandy Gravelly Silt	Topsoil	None	No	N/A	No
3K7541IT	0.25	0.90	Silty Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K7542IT	0.00	0.20	Sandy Gravelly Silt	Topsoil	None	No	N/A	No
3K7542IT	0.20	0.55	Made Ground	Made Ground	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3K7542IT	0.55	1.20	Sandy Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K7543IT	0.00	0.30	Silty Gravelly Clays	Topsoil	None	No	N/A	No
3K7543IT	0.30	0.75	Silty Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K7544IT	0.00	0.25	Silty Sandy Clay	Topsoil	None	No	N/A	No
3K7544IT	0.25	0.70	Silty Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K7544IT	0.70	1.20	Silty Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K7545IT	0.00	0.25	Silty Gravelly Clays	Topsoil	None	No	N/A	No
3K7545IT	0.25	0.85	Silty Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K7545IT	0.85	1.45	Silty Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K7546IT	0.00	0.30	Silty Gravelly Clays	Topsoil	None	No	N/A	No
3K7546IT	0.30	0.90	Silty Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3K7546IT	0.90	1.30	Silty Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6013HP	0.00	0.15	Clay	Topsoil	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3L6013HP	0.15	0.80	Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6013HP	0.80	1.20	Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6015HP	0.00	0.35	Clay	Topsoil	None	No	N/A	No
3L6015HP	0.35	1.20	Sandy Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6017HP	0.00	0.30	Silt	Topsoil	None	Yes	Arch & Geoarch	No
3L6017HP	0.30	0.60	Clayey Silty Clay	Possible Bedrock (Lambeth Group)	None	Yes	Arch & Geoarch	No
3L6017HP	0.60	1.20	Silty Clay	Possible Bedrock (Lambeth Group)	None	Yes	Arch & Geoarch	No
3L6023HP	0.00	0.30	Sandy Silt	Topsoil	None	No	N/A	No
3L6023HP	0.30	1.20	Silty Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6024HP	0.00	0.20	Clay	Topsoil	None	Yes	Arch & Geoarch	No
3L6024HP-A	0.00	0.20	Clay	Topsoil	None	No	N/A	No
3L6024HP-B	0.00	0.10	Silty Clay	Topsoil	None	No	N/A	No
3L6024HP-B	0.10	0.40	Clay	Topsoil	None	No	N/A	No
3L6026HP	0.00	0.35	Clay	Topsoil	None	No	N/A	No
3L6027HP	0.00	0.32	Clay	Made Ground	None	No	N/A	No
3L6027HP	0.32	1.20	Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3L6028HP	0.00	0.25	Sandy Silt	Topsoil	None	No	N/A	No
3L6028HP	0.25	1.20	Silty Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6029HP	0.00	0.10	Sandy Silt	Topsoil	None	No	N/A	No
3L6029HP	0.10	0.35	Silty Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6029HP	0.35	1.20	Silty Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6044HP	0.00	0.14	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
3L6044HP	0.14	0.59	Gravelly Clays	Head Deposits	Low	No	N/A	No
3L6044HP	0.59	0.90	Clay	Head Deposits	Low	No	N/A	No
3L6045HP	0.00	0.40	Gravelly Claysey Sand	Made Ground	None	No	N/A	No
3L6045HP	0.40	1.00	Gravelly Clays	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6045HP	1.00	1.20	Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6046HP	0.00	0.43	Clayey Sand	Made Ground	None	No	N/A	No
3L6046HP	0.43	0.95	Sandy Clay	Head Deposits	Low	No	N/A	No
3L6046HP	0.95	1.20	Sandy Clayey Gravel	River Terrace Deposits	Low	No	N/A	No
3L6100HP	0.00	0.40	Clay	Topsoil	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3L6100HP	0.40	1.20	Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6101DS	0.00	0.29	Clay	Topsoil	None	No	N/A	No
3L6101DS	0.29	1.12	Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6101DS	1.12	1.35	Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6101DS	1.35	2.00	Sandy Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6102HP	0.00	0.30	Silt	Topsoil	None	No	N/A	No
3L6102HP	0.30	1.20	Silty Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6103HP	0.00	0.30	Silt	Topsoil	None	No	N/A	No
3L6103HP	0.30	0.80	Silt	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6103HP	0.80	1.20	Silty Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6104HP	0.00	0.25	Gravelly Silt	Topsoil	None	No	N/A	No
3L6104HP	0.25	0.90	Silt	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6104HP	0.90	1.20	Silty Clay	Possible Bedrock (Lambeth Group)	None	No	N/A	No
3L6105HP	0.00	0.30	Sandy Gravelly Silt	Topsoil	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3L6106DS	0.00	0.35	Gravelly Clays	Topsoil	None	No	N/A	No
3L6107DS	0.00	0.35	Clay	Topsoil	None	No	N/A	No
3M6517HP	0.00	0.48	Made Ground	Made Ground	None	No	N/A	No
3M6517HP	0.48	0.65	Sandy Clay	Possible Head Deposits	Low	No	N/A	No
3M6517HP	0.65	1.20	Sandy Gravelly Clays	Possible Head Deposits	Low	No	N/A	No
3M6601HP	0.00	0.25	Sandy Clay	Topsoil	None	No	N/A	No
3M6601HP	0.25	1.20	Sandy Clay	Possible Bedrock	None	No	N/A	No
3W8526HP	0.00	0.25	Clayey Silt	Topsoil	None	No	N/A	No
3W8526HP	0.25	0.75	Silty Clay	Head Deposits	Low	No	N/A	No
3W8526HP	0.75	0.95	Silty Gravel	River Terrace Deposits	Low	No	N/A	No
3W8527HP	0.00	0.35	Sandy Gravelly Silt	Topsoil	None	No	N/A	No
3W8527HP	0.35	1.20	Silty Clay	Possible Head Deposits	Low	No	N/A	No
3W8528HP	0.00	0.40	Sandy Silt	Topsoil	None	No	N/A	No
3W8528HP	0.40	0.80	Silty Sandy Gravel	Possible River Terrace Deposits	Low	No	N/A	No
3W8528HP	0.80	1.20	Sand	Possible Bedrock	None	No	N/A	No
3W8529SA	0.00	0.35	Sandy Silt	Topsoil	None	No	N/A	No
3W8529SA	0.35	0.70	Silty Sand	Head Deposits	Low	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3W8530SA	0.00	0.20	Sand	Topsoil	None	No	N/A	No
3W8530SA	0.20	0.80	Silty Clay	Head Deposits	Low	No	N/A	No
3W8531HP	0.00	0.60	Silty Clay	Topsoil	None	No	N/A	No
3W8531HP	0.60	1.20	Silty Clay	Possible Head Deposits	Low	No	N/A	No
3W8532HP	0.00	0.25	Silt	Topsoil	None	No	N/A	No
3W8532HP	0.25	0.70	Sandy Clay	Possible Head Deposits	Low	No	N/A	No
3W8532HP	0.70	1.20	Silty Sand	Possible Bedrock	None	No	N/A	No
3W8534DS	0.00	2.20	Gravelly Clays	Made Ground	None	Yes	Geoarch	No
3W8534DS	2.20	3.15	Sandy Gravel	River Terrace Deposits	Low	Yes	Geoarch	No
3W8534DS	3.15	4.00	Clayey Sand	Possible River Terrace Deposits	Low	Yes	Geoarch	No
3W8535SA	0.00	0.30	Silty Clay	Topsoil	None	Yes	Geoarch	No
3W8535SA	0.30	0.80	Silty Clay	Possible River Terrace Deposits	Low	Yes	Geoarch	No
3W8535SA	0.80	1.50	Gravelly Clays	Possible River Terrace Deposits	Low	Yes	Geoarch	No
3W8535SA	1.50	2.50	Silty Clay	Possible River Terrace Deposits	Low	Yes	Geoarch	No
3W8536SA	0.00	0.35	Silty Clay	Topsoil	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3W8536SA	0.35	0.75	Silt	Possible River Terrace Deposits	Low	No	N/A	No
3W8536SA	0.75	1.20	Sandy Silt	Possible River Terrace Deposits	Low	No	N/A	No
3W8536SA	1.20	2.10	Silt	Possible River Terrace Deposits	Low	No	N/A	No
3W8536SA	2.10	3.60	Sandy Gravel	River Terrace Deposits	Low	No	N/A	No
3W8538HP	0.00	0.50	Gravelly Clays	Topsoil	None	Yes	Geoarch	No
3W8538HP	0.50	1.20	Silty Gravel	River Terrace Deposits	Low	Yes	Geoarch	No
3W8539DS	0.00	0.35	Gravelly Clays	Made Ground	None	Yes	Geoarch	No
3W8539DS	0.35	0.75	Sandy Gravelly Clays	Made Ground	None	Yes	Geoarch	No
3W8539DS	0.75	0.85	Sandy Gravel	Made Ground	None	Yes	Geoarch	No
3W8539DS	0.85	2.00	Sandy Clayey Gravel	River Terrace Deposits	Low	Yes	Geoarch	No
3W8553DS	0.00	0.35	Clay	Topsoil	None	Yes	Arch & Geoarch	No
3W8553DS	0.35	0.90	Clay	Head Deposits	Low	Yes	Arch & Geoarch	No
3W8553DS	0.90	1.40	Gravelly Clays	Head Deposits	Low	Yes	Arch & Geoarch	No
3W8554DS	0.00	0.20	Clay	Topsoil	None	Yes	Arch & Geoarch	No
3W8554DS	0.20	0.75	Clay	Head Deposits	Low	Yes	Arch & Geoarch	No
3W8554DS	0.75	1.45	Gravelly Clays	Head Deposits	Low	Yes	Arch & Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3W8556DS	0.00	0.35	Clay	Topsoil	None	No	N/A	No
3W8556DS	0.35	1.60	Gravelly Clays	Possible Head Deposits	Low	No	N/A	No
3W8558SA	0.00	0.30	Clayey Silt	Topsoil	None	No	N/A	No
3W8558SA	0.30	0.65	Clay	Made Ground	None	No	N/A	No
3W8558SA	0.65	3.50	Gravelly Clays	Made Ground	None	No	N/A	No
3W8559TP	0.00	0.30	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
3W8559TP	0.30	3.10	Sandy Gravelly Clays	Possible River Terrace Deposits	Low	No	N/A	No
3W8559TP	3.10	4.00	Gravelly Sandy Clay	Possible Bedrock	None	No	N/A	No
3W8560HP	0.00	0.25	Sandy Silty Clay	Topsoil	None	No	N/A	No
3W8560HP	0.25	0.65	Sandy Clay	Possible Head Deposits	Low	No	N/A	No
3W8560HP	0.65	1.20	Sandy Silty Clay	Possible Head Deposits	Low	No	N/A	No
3W8563TP	0.00	0.30	Gravelly Clays	Topsoil	None	No	N/A	No
3W8563TP	0.30	2.30	Sandy Clay	Possible Head Deposits	Low	No	N/A	No
3W8567SA	0.00	0.30	Gravelly Clays	Topsoil	None	No	N/A	No
3W8567SA	0.30	0.60	Silty Sand	Possible Made Ground	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
3W8567SA	0.60	1.80	Silty Sand	Possible Made Ground	None	No	N/A	No
3W8567SA	1.80	2.40	Clayey Sand	Possible Made Ground	None	No	N/A	No
BH101	0.00	0.55	Silty Gravelly Clays	Topsoil	None	No	N/A	No
BH101	0.55	0.85	Sandy Gravelly Clays	Head Deposits	Low	No	N/A	No
BH101	0.85	1.20	Sandy Gravelly Clays	Head Deposits	Moderate	No	N/A	No
BH101	1.20	1.60	Silty Clay	Possible Raised Beach Deposits	High	No	N/A	No
BH101	1.60	2.10	Silty Sandy Clay	Possible Raised Beach Deposits	High	No	N/A	No
BH101	9.80	10.05	AZCL	N/A	N/A	No	N/A	No
BH101	24.00	24.80	AZCL	N/A	N/A	No	N/A	No
BH102	0.00	0.15	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
BH102	0.15	0.30	Made Ground	Made Ground	None	No	N/A	No
BH102	0.30	0.50	Sandy Gravelly Clays	Head Deposits	Low	No	N/A	No
BH102	0.50	0.90	Silty Sandy Gravelly Clays	Head Deposits	Moderate	No	N/A	No
BH102	0.90	1.20	Sandy Gravelly Clays	Head Deposits	Moderate	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
BH102A	0.00	0.15	Silty Sandy Clay	Topsoil	None	No	N/A	No
BH102A	0.15	0.30	Made Ground	Made Ground	None	No	N/A	No
BH102A	0.30	0.60	Sandy Gravelly Clays	Head Deposits	Low	No	N/A	No
BH102A	0.60	0.80	Sandy Gravelly Clays	Head Deposits	Moderate	No	N/A	No
BH102A	0.80	1.20	Sandy Gravelly Clays	Head Deposits	Moderate	No	N/A	No
BH102A	1.20	7.00	No Recovery	N/A	N/A	No	N/A	No
BH103	0.00	0.10	Sandy Gravelly Clays	Topsoil	None	No	N/A	No
BH103	0.10	0.40	Sandy Gravelly Clays	Head Deposits	Low	No	N/A	No
BH103	0.40	1.05	Gravelly Silty Clay	Head Deposits	Moderate	No	N/A	No
BH103	1.05	1.20	Silty Sandy Gravelly Clays	Raised Beach Deposits	Moderate	No	N/A	No
BH103	1.20	2.29	Sandy Gravelly Clays	Raised Beach Deposits	Moderate	No	N/A	No
BH103	2.29	3.35	Clayey Gravelly Sand	Raised Beach Deposits	Moderate	No	N/A	No
BH103	12.20	13.00	AZCL	N/A	N/A	No	N/A	No
BH104	0.00	0.35	Sandy Gravelly Clays	Topsoil	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
BH104	0.35	0.65	Sandy Gravelly Clays	Head Deposits	Low	No	N/A	No
BH104	0.65	1.20	Silty Sandy Clay	Head Deposits	Moderate	No	N/A	No
BH104	1.20	3.30	Silty Sandy Clay	Raised Beach Deposits	High	No	N/A	No
BH104	3.30	4.00	Silty Clay	Raised Beach Deposits	High	No	N/A	No
BH104	4.00	4.30	AZCL	N/A	N/A	No	N/A	No
BH104	4.30	5.00	Silty Sandy Clay	Raised Beach Deposits	High	No	N/A	No
BH104	5.00	5.50	AZCL	N/A	N/A	No	N/A	No
BH104	6.50	7.60	AZCL	N/A	N/A	No	N/A	No
BH104	15.50	15.95	AZCL	N/A	N/A	No	N/A	No
BH104	16.25	16.80	AZCL	N/A	N/A	No	N/A	No
BH104	17.00	17.40	AZCL	N/A	N/A	No	N/A	No
BH104	18.50	20.00	AZCL	N/A	N/A	No	N/A	No
BH104	20.75	21.10	AZCL	N/A	N/A	No	N/A	No
BH104	45.50	46.50	AZCL	N/A	N/A	No	N/A	No
BH105	0.00	0.50	Clay	Topsoil	None	No	N/A	No
BH105	0.50	1.20	Sandy Clay	Head Deposits	Moderate	No	N/A	No
BH105	1.20	2.70	Sandy Clay	Raised Beach Deposits	High	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
BH105	2.70	3.60	Clayey Sand	Raised Beach Deposits	High	No	N/A	No
BH105	3.60	5.50	Sandy Clay	Raised Beach Deposits	High	No	N/A	No
BH105	5.50	6.80	Sand	Raised Beach Deposits	High	No	N/A	No
BH105	6.80	7.20	Clay	Raised Beach Deposits	High	No	N/A	No
BH105	7.20	7.85	Silty Sandy Clay	Raised Beach Deposits	High	No	N/A	No
BH105	21.50	22.50	AZCL	N/A	N/A	No	N/A	No
BH105	23.00	23.35	AZCL	N/A	N/A	No	N/A	No
BH105	23.75	24.05	AZCL	N/A	N/A	No	N/A	No
BH105	24.50	24.90	AZCL	N/A	N/A	No	N/A	No
BH105	25.25	25.65	AZCL	N/A	N/A	No	N/A	No
BH106	0.00	0.10	Tarmac	Made Ground	None	No	N/A	No
BH106	0.10	0.50	Gravelly Clays	Made Ground	None	No	N/A	No
BH106	0.50	1.20	Clay	Head Deposits	Moderate	No	N/A	No
BH106	1.20	4.20	Clay	Head Deposits	Moderate	No	N/A	No
BH106	4.20	4.80	Silty Clay	Possible Raised Beach Deposits	Moderate	No	N/A	No
BH106	11.20	11.73	AZCL	N/A	N/A	No	N/A	No
BH106	13.50	14.20	AZCL	N/A	N/A	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
BH106	21.50	21.80	AZCL	N/A	N/A	No	N/A	No
BH107	0.00	0.20	Clay	Topsoil	None	No	N/A	No
BH107	0.20	0.60	Gravelly Clays	Alluvium	Low	No	N/A	No
BH107	0.60	1.20	Sandy Gravel	Alluvium	Low	No	N/A	No
BH107	1.20	2.20	Silty Sand	Head Deposits	Low	No	N/A	No
BH107	2.20	3.70	Silty Sand	Head Deposits	Low	No	N/A	No
BH107	27.50	28.20	AZCL	N/A	N/A	No	N/A	No
BH108	0.00	0.28	Sandy Clay	Topsoil	None	Yes	Arch & Geoarch	No
BH108	0.28	0.55	Sandy Clay	Head Deposits	Low	Yes	Arch & Geoarch	No
BH108	0.55	0.80	Sandy Clay	Head Deposits	Low	Yes	Arch & Geoarch	No
BH108	0.80	1.20	Clayey Sand	Head Deposits	Low	Yes	Arch & Geoarch	No
BH108	30.70	32.65	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
BH108	35.00	36.30	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
BH108	36.70	37.45	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
BH108	39.70	41.90	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
BH108	42.70	43.25	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
BH108	56.20	56.90	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
BH108	59.20	60.00	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
BH109	0.00	0.10	Sandy Clay	Topsoil	None	Yes	Arch & Geoarch	No
BH109	0.10	0.50	Sandy Clay	Made Ground	None	Yes	Arch & Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
BH109	0.50	0.70	Gravelly Clays	Head Deposits	Low	Yes	Arch & Geoarch	No
BH109	0.70	1.20	Clay	Head Deposits	Low	Yes	Arch & Geoarch	No
BH109	1.20	2.70	Silty Clay	Head Deposits	Low	Yes	Arch & Geoarch	No
BH202	0.00	0.10	Gravelly Silt	Topsoil	None	No	N/A	No
BH202	0.10	0.25	Silty Gravelly Clays	Made Ground	None	No	N/A	No
BH202	0.25	1.20	Gravelly Silt	Made Ground	None	No	N/A	No
BH202	1.20	2.50	Gravelly Silt	Made Ground	None	No	N/A	No
BH202	2.50	4.72	Sandy Clay	Head Deposits	Moderate	No	N/A	No
BH202	4.72	5.90	Sand	Raised Beach Deposits	High	No	N/A	No
BH202	50.80	55.00	AZCL	N/A	N/A	No	N/A	No
BH301	0.00	0.16	Silt	Topsoil	None	Yes	Arch & Geoarch	No
BH301	0.16	0.40	Gravelly Silt	Head Deposits	Low	Yes	Arch & Geoarch	No
BH301	0.40	0.60	Gravelly Sand	Head Deposits	Low	Yes	Arch & Geoarch	No
BH301	0.60	0.75	Gravelly Clays	Head Deposits	Low	Yes	Arch & Geoarch	No
BH301	67.30	68.00	AZCL	N/A	N/A	Yes	Arch & Geoarch	No
BH302	0.00	0.15	Gravelly Silt	Topsoil	None	Yes	Arch & Geoarch	No
BH302	0.15	0.40	Gravelly Silt	Made Ground	None	Yes	Arch & Geoarch	No
BH302	0.40	0.95	Clayey Gravelly Silt	Head Deposits	Low	Yes	Arch & Geoarch	No
BH302	0.95	1.20	Chalk	Head Deposits	Low	Yes	Arch & Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
BH303D	0.00	0.50	Clay	Topsoil	None	No	N/A	No
BH303D	0.50	1.20	Sandy Clay	Head Deposits	Moderate	No	N/A	No
BH303D	1.20	2.90	Gravelly Clays	Head Deposits	Moderate	No	N/A	No
BH303D	4.20	4.80	AZCL	N/A	N/A	No	N/A	No
BH303D	64.00	64.30	AZCL	N/A	N/A	No	N/A	No
BH303D	92.50	93.40	AZCL	N/A	N/A	No	N/A	No
BH303D	94.00	95.50	AZCL	N/A	N/A	No	N/A	No
BH501	0.00	0.40	Gravelly Silt	Topsoil	None	Yes	Geoarch	No
BH501	0.40	1.20	Clayey Sandy Gravel	River Terrace Deposits	Low	Yes	Geoarch	No
BH501	1.20	3.50	Gravel	River Terrace Deposits	Low	Yes	Geoarch	No
BH501	44.20	44.65	AZCL	N/A	N/A	Yes	Geoarch	No
BH502	0.00	0.30	Silt	Topsoil	None	Yes	Geoarch	No
BH502	0.30	0.55	Silty Gravel	Made Ground	None	Yes	Geoarch	No
BH502	0.55	4.25	Gravel	River Terrace Deposits	Low	Yes	Geoarch	No
BH502	9.60	10.70	AZCL	N/A	N/A	Yes	Geoarch	No
BH502	11.10	12.50	AZCL	N/A	N/A	Yes	Geoarch	No
BH502	14.10	15.65	AZCL	N/A	N/A	Yes	Geoarch	No
BH502	16.40	18.45	AZCL	N/A	N/A	Yes	Geoarch	No
BH502	19.10	19.70	AZCL	N/A	N/A	Yes	Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
BH502	20.50	23.00	AZCL	N/A	N/A	Yes	Geoarch	No
BH502	23.60	25.00	AZCL	N/A	N/A	Yes	Geoarch	No
BH503	0.00	0.20	Clay	Topsoil	None	No	N/A	No
BH503	0.20	1.00	Clay	Head Deposits	Low	No	N/A	No
BH503	1.00	2.10	Sandy Gravel	River Terrace Deposits	Low	No	N/A	No
BH503	17.75	18.50	AZCL	N/A	N/A	No	N/A	No
BH503	20.00	21.50	AZCL	N/A	N/A	No	N/A	No
BH503	27.50	28.20	AZCL	N/A	N/A	No	N/A	No
BH503	35.50	36.30	AZCL	N/A	N/A	No	N/A	No
BH503	38.50	38.80	AZCL	N/A	N/A	No	N/A	No
BH503	41.50	42.05	AZCL	N/A	N/A	No	N/A	No
BH503	44.50	45.05	AZCL	N/A	N/A	No	N/A	No
BH503	47.50	48.55	AZCL	N/A	N/A	No	N/A	No
BH503	49.00	49.55	AZCL	N/A	N/A	No	N/A	No
BH504	0.00	0.25	Silty Gravel	Topsoil	None	No	N/A	No
BH504	0.25	1.20	Sandy Clay	Head Deposits	Low	No	N/A	No
BH504	1.20	2.89	Gravelly Sand	River Terrace Deposits	Low	No	N/A	No
BH504	9.50	10.70	AZCL	N/A	N/A	No	N/A	No
BH504	11.00	13.25	AZCL	N/A	N/A	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
BH504	17.00	19.25	AZCL	N/A	N/A	No	N/A	No
BH504	20.00	20.75	AZCL	N/A	N/A	No	N/A	No
BH504	23.00	23.30	AZCL	N/A	N/A	No	N/A	No
BH504	24.50	25.55	AZCL	N/A	N/A	No	N/A	No
BH504	26.90	29.00	AZCL	N/A	N/A	No	N/A	No
BH504	35.00	35.75	AZCL	N/A	N/A	No	N/A	No
BH504	36.50	40.30	AZCL	N/A	N/A	No	N/A	No
BH505	0.00	0.35	Sandy Gravelly Silt	Topsoil	None	Yes	Arch & Geoarch	No
BH505	0.35	0.60	Sandy Gravelly Clays	Alluvium	None	Yes	Arch & Geoarch	No
BH505	0.60	1.70	Sandy Gravel	River Terrace Deposits	None	Yes	Arch & Geoarch	No
BH505	1.70	1.90	Sandy Gravel	River Terrace Deposits	None	Yes	Arch & Geoarch	No
BH505	1.90	2.20	Sandy Gravel	River Terrace Deposits	None	Yes	Arch & Geoarch	No
BH505	2.20	3.40	Sandy Gravel	River Terrace Deposits	None	Yes	Arch & Geoarch	No
BH505	3.40	3.80	Sandy Gravel	River Terrace Deposits	None	Yes	Arch & Geoarch	No
BH505	3.80	5.45	Clayey Gravelly Silt	River Terrace Deposits	None	Yes	Arch & Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
BH506	0.00	0.40	Sandy Gravelly Clays	Topsoil	None	Yes	Geoarch	No
BH506	0.40	0.80	Sandy Gravelly Clays	Head Deposits	Low	Yes	Geoarch	No
BH506	0.80	1.00	Sandy Gravelly Clays	Head Deposits	Low	Yes	Geoarch	No
BH506	1.00	1.30	Sandy Gravel	River Terrace Deposits	Low	Yes	Geoarch	No
BH506	1.30	2.60	Gravelly Silty Clay	River Terrace Deposits	Low	Yes	Geoarch	No
BH506	18.15	18.90	AZCL	N/A	N/A	Yes	Geoarch	No
BH506	20.20	28.45	AZCL	N/A	N/A	Yes	Geoarch	No
BH506	42.10	43.75	AZCL	N/A	N/A	Yes	Geoarch	No
BH506	45.60	46.35	AZCL	N/A	N/A	Yes	Geoarch	No
BH507	0.00	0.35	Sandy Clay	Topsoil	None	No	N/A	No
BH507	0.35	1.35	Sandy Gravelly Clays	Made Ground	None	No	N/A	No
BH507	1.35	1.75	Sandy Clay	Made Ground	None	No	N/A	No
BH507A	0.00	0.35	Sandy Clay	Topsoil	None	No	N/A	No
BH507A	0.35	1.30	Gravelly Clays	Made Ground	None	No	N/A	No
BH507A	1.30	1.40	Gravelly Sand	Made Ground	None	No	N/A	No
BH507B	0.00	0.20	Sandy Clay	Topsoil	None	No	N/A	No
BH507B	0.20	0.60	Gravelly Sand	Made Ground	None	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
BH507B	0.60	0.80	Sandy Clay	Made Ground	None	No	N/A	No
BH507B	0.80	1.35	Clayey Gravel	Made Ground	None	No	N/A	No
BH507B	1.35	1.90	Sandy Clay	Made Ground	None	No	N/A	No
BH507C	0.00	0.30	Made Ground	Made Ground	None	No	N/A	No
BH507C	0.30	1.20	Made Ground	Made Ground	None	No	N/A	No
BH507C	1.20	1.50	Clayey Silt	Alluvium	Low	No	N/A	No
BH507C	1.50	3.60	Clay	Alluvium	Moderate	No	N/A	No
BH507C	9.60	10.95	AZCL	N/A	N/A	No	N/A	No
BH507C	11.30	13.00	AZCL	N/A	N/A	No	N/A	No
BH507C	14.10	15.05	AZCL	N/A	N/A	No	N/A	No
BH507C	17.40	18.50	AZCL	N/A	N/A	No	N/A	No
BH507D	0.00	0.35	Made Ground	Made Ground	None	No	N/A	No
BH507D	0.35	0.86	Made Ground	Made Ground	None	No	N/A	No
BH507D	0.86	2.00	Sandy Silt	Alluvium	Low	No	N/A	No
BH507D	2.00	3.40	Sandy Silt	Alluvium	Moderate	No	N/A	No
BH507D	20.65	21.07	AZCL	N/A	N/A	No	N/A	No
BH507D	23.10	23.65	AZCL	N/A	N/A	No	N/A	No
BH507D	36.20	37.75	AZCL	N/A	N/A	No	N/A	No
BH507D	38.10	38.85	AZCL	N/A	N/A	No	N/A	No
BHP01	0.00	0.65	Made Ground	Made Ground	None	Yes	Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
BHP01	0.65	2.90	Sandy Clay	Clay	Low	Yes	Geoarch	No
BHP01	2.90	3.50	Sandy Gravelly Clays	Gravelly Clays	Moderate	Yes	Geoarch	No
BHP01	3.50	4.00	Sandy Gravelly Clays	Chalky Silts and Gravels	Moderate	Yes	Geoarch	No
BHP01	4.00	6.50	Gravelly Silt	Chalky Silts and Gravels	High	Yes	Geoarch	No
BHP01	6.50	8.00	AZCL	N/A	N/A	Yes	Geoarch	No
BHP01	8.00	13.10	Gravelly Silt	Possible Bedrock	?Low	Yes	Geoarch	No
BHP01	14.30	15.00	AZCL	N/A	N/A	Yes	Geoarch	No
BHP02	0.00	0.25	Made Ground	Made Ground	None	Yes	Geoarch	No
BHP02	0.25	1.70	Clayey Sandy Gravelly Silt	Gravelly Clays	Low	Yes	Geoarch	No
BHP02	1.70	3.40	Sandy Gravelly Clays	Gravelly Clays	Moderate	Yes	Geoarch	No
BHP02	3.40	4.00	Gravelly Silt	Chalky Silts and Gravels	High	Yes	Geoarch	No
BHP02	4.00	7.50	Sandy Gravelly Silt	Chalky Silts and Gravels	High	Yes	Geoarch	No
BHP02	7.50	8.10	AZCL	N/A	N/A	Yes	Geoarch	No
BHP02	8.10	8.50	Chalky Gravel	Chalky Silts and Gravels	Moderate	Yes	Geoarch	No
BHP02	8.50	9.25	AZCL	N/A	N/A	Yes	Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
BHP02	9.25	9.80	Chalk	Possible Bedrock	?Low	Yes	Geoarch	No
BHP02	9.80	10.35	AZCL	N/A	N/A	Yes	Geoarch	No
BHP02	10.35	11.30	Chalk	Possible Bedrock	?Low	Yes	Geoarch	No
BHP02	11.30	13.30	Chalk	Possible Bedrock	?Low	Yes	Geoarch	No
BHP05	0.00	0.20	Made Ground	Made Ground	None	Yes	Geoarch	No
BHP05	0.20	0.40	Made Ground	Made Ground	None	Yes	Geoarch	No
BHP05	0.40	0.45	Made Ground	Made Ground	None	Yes	Geoarch	No
BHP05	0.45	0.60	Made Ground	Made Ground	None	Yes	Geoarch	No
BHP05	0.60	1.00	Made Ground	Made Ground	None	Yes	Geoarch	No
BHP05	1.00	1.70	Sandy Gravelly Clays	Gravelly Clays	Low	Yes	Geoarch	No
BHP05	1.70	2.10	Sandy Gravelly Clays	Gravelly Clays	Low	Yes	Geoarch	No
BHP05	2.10	3.40	Sandy Gravelly Clays	Gravelly Clays	Moderate	Yes	Geoarch	No
BHP05	3.40	4.30	Gravelly Clays	Gravelly Clays	Moderate	Yes	Geoarch	101, 102
BHP05	4.30	5.00	Gravelly Silty Clay	Chalky Silts and Gravels	High	Yes	Geoarch	103, 104
BHP05	5.00	5.70	Silty Clayey Gravel	Chalky Silts and Gravels	High	Yes	Geoarch	No
BHP05	5.70	8.20	Sandy Silt	Chalky Silts and Gravels	High	Yes	Geoarch	No
BHP05	8.20	8.65	AZCL	N/A	N/A	Yes	Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
BHP05	8.65	12.70	Chalky Gravel	Possible Bedrock	?Low	Yes	Geoarch	No
BHP05	12.70	15.70	Chalky Gravel	Possible Bedrock	?Low	Yes	Geoarch	No
BHP06	0.00	0.23	Clayey Gravelly Sand	Topsoil	None	Yes	Geoarch	No
BHP06	0.23	0.80	Made Ground	Made Ground	None	Yes	Geoarch	No
BHP06	0.80	1.50	Sandy Gravelly Clays	Gravels	?Low	Yes	Geoarch	No
BHP06	1.50	2.60	Clayey Sandy Gravel	Gravels	?Low	Yes	Geoarch	No
BHP06	2.60	3.60	Sandy Gravel	Gravels	?Low	Yes	Geoarch	No
BHP06	3.60	6.20	Clayey Sandy Gravel	Gravels	?Low	Yes	Geoarch	No
BHP06	6.20	7.20	Clayey Sandy Gravel	Gravels	?Low	Yes	Geoarch	No
BHP06	7.20	7.75	AZCL	N/A	N/A	Yes	Geoarch	No
BHP06	7.75	9.00	Silty Sandy Gravel	Possible Bedrock	?Low	Yes	Geoarch	No
BHP06	9.00	10.50	Silty Sandy Gravel	Possible Bedrock	None	Yes	Geoarch	No
BHP06	10.50	10.90	AZCL	N/A	N/A	Yes	Geoarch	No
TP110	0.00	0.40	Sandy Silt	Topsoil	None	Yes	Arch	No
TP110	0.40	1.80	Sandy Clay	Head Deposits	Low	Yes	Arch	No
TP111	0.00	0.40	Sandy Silt	Topsoil	None	Yes	Arch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
TP111	0.40	1.00	Sandy Clay	Head Deposits	Low	Yes	Arch	No
TP111	1.00	2.60	Sandy Gravelly Clays	Head Deposits	Low	Yes	Arch	No
TP111	2.60	3.20	Clayey Sand	Head Deposits	Low	Yes	Arch	No
TP112	0.00	0.40	Sandy Silt	Topsoil	None	Yes	Arch	No
TP112	0.40	1.00	Sandy Clay	Head Deposits	Low	Yes	Arch	No
TP112	1.00	2.90	Sandy Clay	Head Deposits	Low	Yes	Arch	No
TP112	2.90	3.60	Gravelly Clays	Head Deposits	Low	Yes	Arch	No
TP304	0.00	0.12	Clay	Topsoil	None	Yes	Arch & Geoarch	No
TP305	0.00	0.20	Clay	Topsoil	None	Yes	Arch & Geoarch	No
TP306	0.00	0.25	Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No
TP501	0.00	0.25	Sandy Gravelly Silt	Made Ground	None	Yes	Geoarch	No
TP501	0.25	0.50	Clayey Gravel	Head Deposits	Low	Yes	Geoarch	No
TP501	0.50	1.50	Sandy Gravel	River Terrace Deposits	Low	Yes	Geoarch	No
TP502	0.00	0.25	Gravelly Clays	Topsoil	None	Yes	Geoarch	No
TP502	0.25	0.60	Sandy Gravelly Clays	Head Deposits	Low	Yes	Geoarch	No
TP502	0.60	1.60	Gravel	River Terrace Deposits	Low	Yes	Geoarch	No
TP503	0.00	0.20	Clay	Topsoil	None	Yes	Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
TP503	0.20	0.45	Sandy Clay	Head Deposits	Low	Yes	Geoarch	No
TP503	0.45	1.40	Gravel	River Terrace Deposits	Low	Yes	Geoarch	No
TP504	0.00	0.20	Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No
TP504	0.20	0.70	Gravelly Clays	Head Deposits	Low	Yes	Arch & Geoarch	No
TP504	0.70	1.20	Gravelly Clays	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
TP504	1.20	1.50	Clayey Sandy Gravel	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
TP505	0.00	0.20	Clay	Topsoil	None	Yes	Arch & Geoarch	No
TP505	0.20	0.70	Sandy Gravelly Clays	Made Ground	None	Yes	Arch & Geoarch	No
TP505	0.70	1.60	Clayey Gravel	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
TP506	0.00	0.40	Clay	Topsoil	None	Yes	Arch & Geoarch	No
TP506	0.40	0.75	Gravelly Clays	Head Deposits	Low	Yes	Arch & Geoarch	No
TP506	0.75	1.50	Clayey Gravel	River Terrace Deposits	Low	Yes	Arch & Geoarch	No
TP507	0.00	0.20	Gravelly Clays	Topsoil	None	Yes	Arch & Geoarch	No
TP507	0.20	1.40	Clay	Head Deposits	Low	Yes	Arch & Geoarch	No
TP508	0.00	0.35	Clay	Topsoil	None	Yes	Arch & Geoarch	No
TP508	0.35	1.40	Clay	Head Deposits	Low	Yes	Arch & Geoarch	No
TP509	0.00	0.36	Gravelly Clays	Made Ground	None	Yes	Arch & Geoarch	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
TP509	0.36	1.00	Clay	Head Deposits	Low	Yes	Arch & Geoarch	No
TPP01	0.00	0.30	Clayey Gravelly Silt	Topsoil	None	Yes	Geoarch	No
TPP01	0.30	0.70	Silty Gravelly Clays	Clay	Low	Yes	Geoarch	No
TPP01	0.70	1.40	Silty Gravelly Clays	Gravelly Clays	Moderate	Yes	Geoarch	No
TPP01	1.40	3.10	Silty Gravelly Clays	Gravelly Clays	Moderate	Yes	Geoarch	No
TPP01	3.10	4.00	Silty Gravelly Clays	Chalky Silts and Gravels	High	Yes	Geoarch	No
TPP02	0.00	0.70	Made Ground	Made Ground	None	Yes	Geoarch	No
TPP02	0.70	1.20	Silty Gravelly Clays	Clay	Low	Yes	Geoarch	No
TPP02	1.20	2.00	Silty Gravelly Clays	Gravelly Clays	Moderate	Yes	Geoarch	No
TPP02	2.00	3.10	Silty Gravelly Clays	Gravelly Clays	Moderate	Yes	Geoarch	No
TPP02	3.10	4.00	Gravelly Clays	Gravelly Clays	Moderate	Yes	Geoarch	No
TPP05-DS	0.00	0.35	Made Ground	Made Ground	None	No	N/A	No
TPP05-DS	0.35	0.70	Made Ground	Made Ground	None	No	N/A	No
TPP05-DS	0.70	1.80	Clay	Alluvium	Low	No	N/A	No
TPP05-DS	1.80	2.85	Sandy Gravelly Clays	Alluvium	Low	No	N/A	No

Intervention	Top (m bgl)	Base (m bgl)	Lithology	Stratigraphy	Palaeoenviron. Assessment priority	Monitored?	Monitoring type	Sampled?
TPP05-DS	2.85	4.30	Clayey Gravelly Sand	Alluvium	Low	No	N/A	No
TPP05-DS	4.30	5.20	Silty Gravelly Clays	Gravelly Clays	Moderate	No	N/A	No

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Appendix 7 Sample Register

Intervention	Sample number	Depth (m bgl)	Context	Deposit	Sample Size (litres)
BHP05	101	3.60	90506	Gravelly Clays	2
BHP05	102	3.70–3.90	90506	Gravelly Clays	2
BHP05	103	4.40–4.60	90507	Chalky Silts and Gravels	2
BHP05	104	4.80–5.00	90507	Chalky Silts and Gravels	2

Appendix 8 OASIS form

OASIS Summary for wessexar1-521170

OASIS ID (UID)	wessexar1-521170
Project Name	Hampshire Water for Life Recycling Project Archaeological and Geoarchaeological Monitoring of Phase 1, Phase 2 and Phase 3a–3c Ground Investigation Works
Sitename	Hampshire Water for Life Recycling Project
Sitecode	271400
Project Identifier(s)	271400
Activity type	Watching Brief
Planning Id	
Reason For Investigation	Planning: Pre application
Organisation Responsible for work	Wessex Archaeology
Project Dates	18-Nov-2022 - 13-May-2024
Location	Hampshire Water for Life Recycling Project NGR : SU 70781 05526 LL : 50.844936939272706, -0.99602189733118 12 Fig : 470781,105526
Administrative Areas	Country : England County/Local Authority : Hampshire Local Authority District : Havant Parish : Havant, unparished area

Project Methodology	Wessex Archaeology was commissioned by Southern Water Ltd to produce a report outlining the results of archaeological and geoarchaeological monitoring of Ground Investigation (GI) works carried out to inform the design for the proposed Hampshire Water Recycling and Water Transfer Project. The monitoring was carried out in order to mitigate against impacts from the GI works on the archaeological resource, and to characterise any archaeological or geoarchaeological deposits present. The Hampshire Water Recycling and Water Transfer Project introduces a new treatment process to turn treated wastewater into purified recycled water, and then transfer this water to the Havant Thicket Reservoir. The Project development proposals comprise a new Water Recycling Plant located south of Havant (Budds Farm), a new underground pipeline linking the Water Recycling Plant to Havant Thicket Reservoir, and a new underground pipeline linking the Water Recycling Plant to Otterbourne Water Supply Works. The GI program comprised four phases, Phase 1 (24 interventions), Phase 2 (47 interventions), Phase 3a (14 interventions), Phase 3b (70 interventions) and Phase 3b (90 interventions). Selected interventions were identified for archaeological, geoarchaeological and/or combined archaeological monitoring (Royal HaskoningDHV 2022, 2023, 2024). In total 14 interventions were archaeologically monitored, 40 geoarchaeologically and 47 subject to combined monitoring. The potential of all Quaternary geological units identified during the GI works to preserve significant paleoenvironmental evidence has been reviewed. Stratigraphic logs from the Phase 1, Phase 2 and Phases 3a–3c were subject to geoarchaeological review. These logs were combined with previous GI records and a review of British Geological Survey (BGS) archive boreholes (BGS GeoIndex) from within a 1km boundary of the Project’s Environmental Impact Assessment (EIA) scoping area. The combined dataset has been used to provide an updated deposit model for Quaternary geological deposits within the Project Boundary.

Project Results	The monitoring successfully characterised the Quaternary deposits present at selected locations and identified deposits with geoarchaeological potential. This potential includes for significant archaeological remains (artefacts, archaeological layers etc), as well as palaeoenvironmental remains reflective of past human activity, landscapes and environments. No archaeology was identified during the monitoring. Due to the methods applied and scope of the GI works, opportunities for sampling geoarchaeological deposits with palaeoenvironmental potential were limited, but a small number of samples suitable for palaeoenvironmental assessment were obtained. The results of the monitoring have been combined with data presented in a prior Geoarchaeological Desk-Based Assessment (GDBA) and Geoarchaeological Landscape Characterisation (GLC) (Wessex Archaeology 2023a), which utilised available datasets, including Phase 1 and 2 GI data, to divide the Project's EIA Scoping Area into 28 Geoarchaeological Character Zones (GCZs) based on the Quaternary landscape features and deposits present. The combine datasets have been reviewed in relation to outline Project plans for development (Southern Water 2024) to provide an assessment of the Quaternary geoarchaeological resource that is likely to be impacted. The review of geoarchaeological potential and proposed impacts has established that the Project is likely to impact on Quaternary geological deposits with significant geoarchaeological potential within defined areas of specific GCZs. GCZs containing deposits with the greatest geoarchaeological potential and which are likely to be impacted on are: GCZs 5b-c – Pleistocene Raised Beach Deposits, overlain by Pleistocene Head Deposits. The Raised Beach Deposits are correlated with the Brighton-Norton Beach, dated to late MIS 7 to MIS 6 (220–170 Kya; Bates et al. 2010). The Raised Beach Deposits and Head Deposits have the potential to contain significant Middle Palaeolithic archaeology, which could include in situ lithic scatters. The Raised Beach Deposits have high potential to contain significant palaeoenvironmental evidence, whilst the Head Deposits have moderate potential. GCZ 6 – Quaternary deposits within a basin formed in the chalk bedrock. Three sets of deposits with geoarchaeological potential have been highlighted; Chalky Silts and Gravels, which are likely Pleistocene freshwater Pleistocene deposits, and which may date to MIS 3 (57 –29 Kya) and/or MIS 6 (191–130 Kya), overlying likely Pleistocene Gravelly Clays, whose mode of deposition is uncertain, and likely Holocene alluvial Clays formed in Langstone Harbour. The Chalky Silts and Gravels and Gravelly Clays have potential to contain significant palaeoenvironmental datasets, whilst the Clays have generally low palaeoenvironmental potential, but do have archaeological potential. GCZ 8 – Dry valleys and solution features formed with the chalk bedrock on Portsdown Hill, highlighted as localised capture points for Quaternary sediments. Deposits within both the dry valleys and solution features can preserve significant prehistoric archaeology, including in situ lithic scatters on buried land surfaces, and palaeoenvironmental evidence. Palaeolithic handaxes are recorded from Portsdown Hill which may be from these contexts, whilst significant Mesolithic lithic assemblages are known from similar capture points and deposits in the area. GCZ 12 – Pleistocene river terraces, some of which are in a previously unrecognised likely former Pleistocene course of the Wallington River, and solution features. The Wallington Rivers former course is within what is now a dry valley that has subsequently been infilled with Pleistocene and/or Holocene Slope Deposits. Both the Pleistocene River Terrace Deposits and Pleistocene/Holocene Slope Deposits have potential for significant archaeology dating from the Palaeolithic period onwards. They may also locally include units with palaeoenvironmental potential. Solution features with potential for solution features containing

	geoarchaeologically significant deposits occur in areas of chalk bedrock. GCZ 15 – Up to seven Pleistocene river terraces of the River Meon, in places overlain by Pleistocene and/or Holocene Slope Deposits. The age and geoarchaeological potential of the terraces is poorly understood, but the large number of terraces indicates potential for Palaeolithic archaeology. GCZ 17b – Valley containing Slope Deposits, with a possible Holocene channel in the base. The Slope Deposits may include Holocene Colluvium overlying Pleistocene Head. The sediments have not been investigated and their potential to contain archaeology is uncertain, but prehistoric archaeology, which could include surfaces associated with in situ lithic scatters, could occur. The possible Holocene channel has only been identified in LiDAR data and it's geoarchaeological potential is unknown. GCZ 19 – Valley of Kitnocks Gully, a tributary of the River Hamble. The valley contains sequences of Slope Deposits and areas where the British Geological survey (BGS) map Holocene Alluvium. These Slope Deposits may include Holocene Colluvium and Pleistocene Head Deposits, which may provide contexts for significant prehistoric archaeology. The Holocene Alluvium has not been investigated and its geoarchaeological potential is unknown. GCZ 21 – Pleistocene river terraces of the River Hamble and overlying Pleistocene/Holocene Slope Deposits, and Holocene Alluvium. The specific distribution of River Terrace Deposits and the number of river terraces is uncertain. Geoarchaeological potential is similarly poorly understood but large amounts Palaeolithic artefacts are known from the terraces of the River Test, of which the Hamble is a tributary, which indicates potential for Palaeolithic archaeology. Impacts on the Holocene Alluvium will be limited, with the exception of the northern edge of the Holocene floodplain, a landscape setting where prehistoric activity could be expected. GCZ 24 – Holocene floodplain of the Bow Lake Stream where palaeochannels with geoarchaeological potential occur. One possible palaeochannel may be impacted. Potential for archaeology in areas on the southern and northern edges of the alluvial floodplain is also highlighted. GCZ 26 – River terraces of the River Itchen, locally overlain by Head Deposits. At least two Pleistocene river terraces will be impacted, Terrace 3 and Terrace 1. The Terrace 3 deposits are equivalent to those located to the north at Colden Common, which have produced the most significant Lower to Middle Palaeolithic archaeological assemblages known from the terraces of the River Itchen. The geoarchaeological potential of Terrace 1 is less well understood but these deposits have also produced Palaeolithic archaeology. The results of the GI monitoring and review of the geoarchaeological resource has demonstrated that in defined areas the Project will impact on deposits that have significant geoarchaeological potential. In order to mitigate against these impacts a program of targeted geoarchaeological investigations will be required. A series of Project-specific research objectives and targeted recommendations for geoarchaeological investigations are provided.
Keywords	
Funder	Water company Southern Water Ltd
HER	
Person Responsible for work	
HER Identifiers	
Archives	

Report generated on: 25 Nov 2024, 14:52

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Project Boundary

0 5 km

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Figure 1: Project location

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GCZ 27
GCZ 28
GCZ 26
GCZ 25
GCZ 24
GCZ 23
GCZ 22b
GCZ 22a
GCZ 21
GCZ 20
GCZ 19
GCZ 18
GCZ 17b
GCZ 16
GCZ 17a
GCZ 15
GCZ 13
GCZ 11
GCZ 14
GCZ 12
GCZ 9
GCZ 8
GCZ 7
GCZ 5c
GCZ 6
GCZ 4b
GCZ 5a
GCZ 3
GCZ 1a
GCZ 2
GCZ 1b

Petersfield
Eastleigh
Bishop's Waltham
Hedge End
Southampton
Wickham
Horndean
Fareham
Havant
Emsworth
Gosport
Portsmouth
Cowes
East Cowes
Ryde

J12 J13 J14 J4 J5 J7 J8 J10 J11 J12 J1 J2 J3 J4 J5

M27 A35 A33 A3024 A3025 A27 A32 A3 A288 A2030 A3020

Salisbury
Winchester
Site
SOUTH DOWNS NATIONAL PARK
NEW FOREST NATIONAL PARK
Chichester
Portsmouth

Project Boundary
Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area

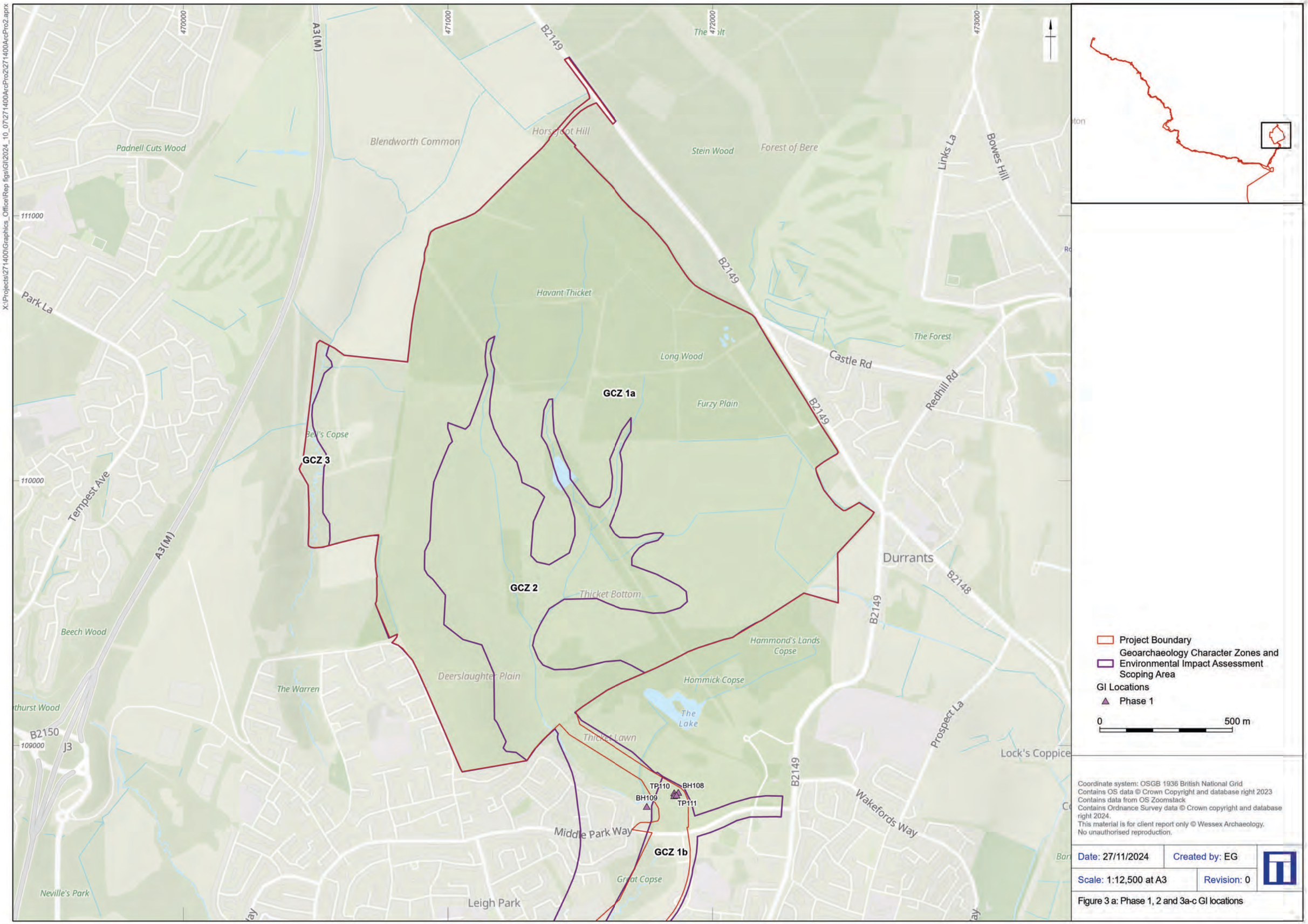
0 5 km

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Figure 2: Project EIA Scoping Area and Geoarchaeological Character Zones

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Figure 3 a: Phase 1, 2 and 3a-c GI locations

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GCZ 1b
BH107
GCZ 2
BH106
GCZ 4a
GCZ 5a
BH105
BH104
GCZ 5b
BH103
GCZ 4b
BH102
BH102A
BH101
GCZ 8
GCZ 7
BH202
GCZ 5c
TPP05-DS
BHP06
BHP02
BHP05
TPP02
2B1500SA
BHP01
TPP01
GCZ 6

Stakes Hill Rd
Johnston's Coppice
A3(M)
B2150
Park House Fm
Middle Park Way
Purbrook Way
Gundymoor Wood
J4
Littlepark Wood
College Rd
Park La
Bedhampton
Stockbridge La
Barrcroft Way
Bedhampton Way
Petersfield Road
B2149
Battin's Copse
Crossland Dr
Havant
Elmleigh Rd
Camp Down
Portsdown Hill Road
B2177
Farlington
J5
A2030
A27
Harts Farm Way
Brockhampton Stream
Brockhampton
West St
East St
Langstone
Langstone Road
Wade Court Farm
Chalkdock Lake
South Moor
A3023

469000
470000
471000
472000
108000
107000
106000
105000

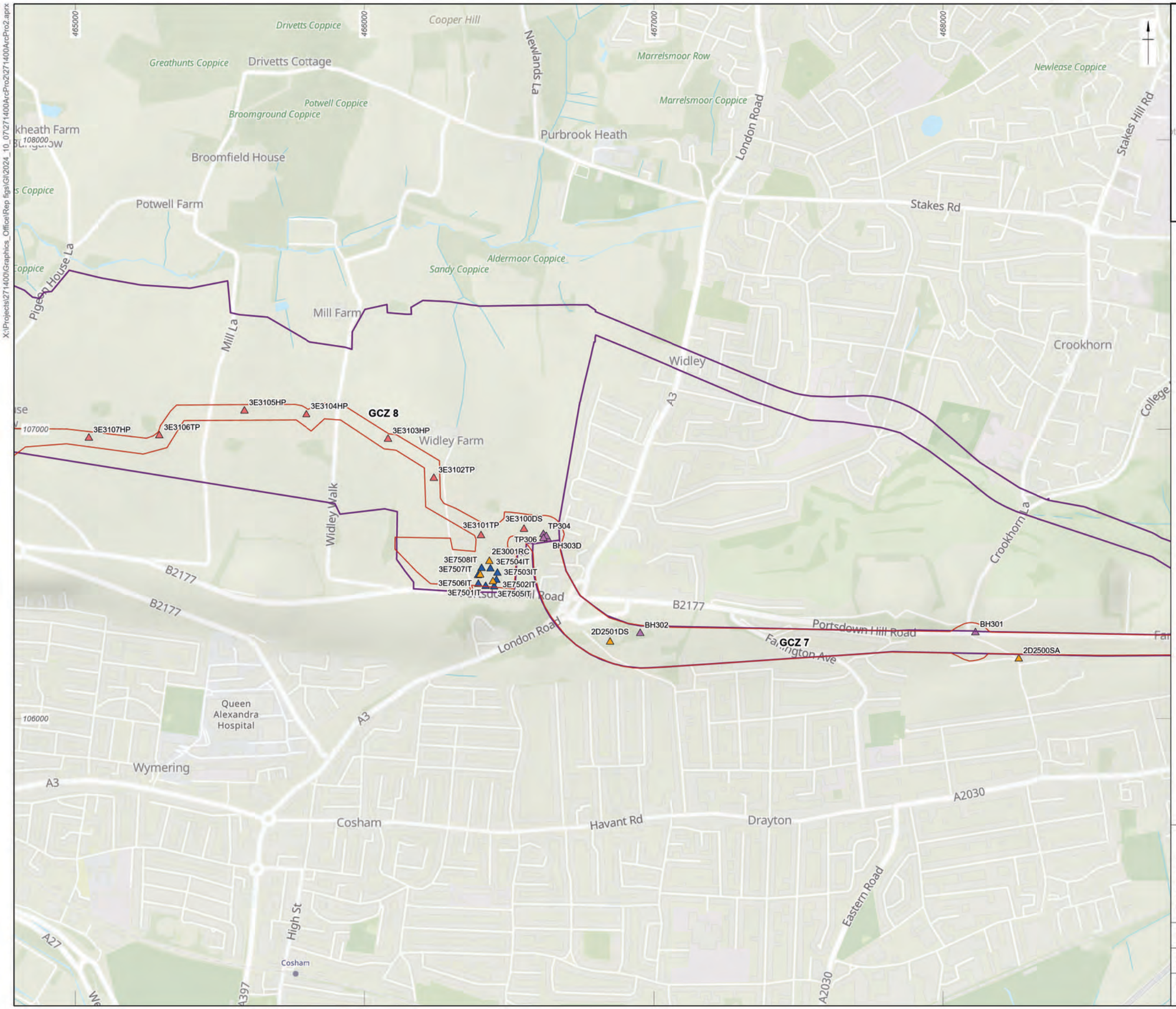
Project Boundary
Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area
GI Locations
Phase 1
Phase 2
Phase 3A
0
500 m

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Figure 3 b: Phase 1, 2 and 3a-c GI locations

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Figure 3 c: Phase 1, 2 and 3a-c GI locations

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461000 462000 463000 464000

108000 107000 106000

Ham Coppice
Hohern Coppice
Southwick
Back La
West St
High St
Ham Rd
Ham Farm
GCZ 9
eydown Coppice
Keepers Cottage
Collier Row
Perrige's Coppice
Stroud Coppice
B2177
The Wilderness
Dairy Clump
Southwick Park Lake
Comphouse Moor Coppice
Comphouse Farm
Sawyer's Wood
Hookhea
Bunga
Pitymoor Coppice
Tree Coppice Plantation
Venables Copp
Tree Coppice
Pinsley Plantation
Bushy Coppic
Offwell Farm
Monumental La
Portchester La
Crooked Walk La
GCZ 8
3E3036DS
3E3035DS
3E3034HP
3E3115DS
3E3114DS
3E3113HP
3E3112TP
3E3119HP
3E3028HP
3E3111HP
3E3110DS
3E3109HP
3E3108TP
3E3023TP
3E3021DS
3E3022HP
3E3020DS
3E3019DS
Pinsley Lodge
New Barns Farm
Pigeon House Bungalow
Mountemoor's Coppice
Portsdown Hill Rd
Nelson La
Skew Rd
James Callaghan Dr
M27
Hill Rd
Portsview Ave
Jubilee Ave
Allaway Ave
Paulsgrove
Portchester
A27

Project Boundary
Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area
GI Locations
Phase 3C

0 500 m

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Figure 3 d: Phase 1, 2 and 3a-c GI locations

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3W8560HP
3W8567SA
3W8559TP
3W8563TP
3W8558SA
3W8556DS
2F3537DS
2F3513DS
3W8554DS
3W8553DS
2F3512RC
3F7512IT
3F7510IT
3F7509IT
2F3505DS
3F7513IT
2F3504DS
3F3602HP
3F3521HP
2F3503SA
2F3502SA
3F3519HP
3F3601HP
2F3501DS
3E3117DS
2F3500DS
3E3038HP

GCZ 14
GCZ 13
GCZ 12
GCZ 11
GCZ 10
GCZ 9
GCZ 8

Crockerhill Farm
Blakes Copse
Orchard Copse
Misty Hollow
Dirty Ground Copse
Yewtree Row
Staversash Copse
Carmans Copse
The Hanger
Heytesbury Farm
Crockerhill
Forestalls Copse
Chancellors Copse
Homerhill Copse
Prior's Hold Farm
Carmans Farm
Bere Farm
Bucks Copse
Pigeonhouse Coppice
Chalk Pit Farm House
Gravelhole Copse
Boarhunt Mill
Grub Coppice
Mill Coppice
Albany Farm
Wallington River
Moor Coppice
Dirtystile Copse
Ashleydown
Redell Farm
The Scotchcart Farmhouse
Boarhunt
The Lodge
North Fareham
Pook La
Nine Elms La
Spurlings Rd
Boarhunt Rd
Monument Farm
Fort Nelson
Portsdown Hill Rd
Standard Way
Old Turnpike
Park La
Wallington

M27
J10
J11
A32
RD2

458000
459000
460000
110000
109000
108000
107000

Project Boundary
Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area
GI Locations
Phase 2
Phase 3C

0 500 m

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Figure 3 e: Phase 1, 2 and 3a-c GI locations

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Wickham
Wickham Park
New Copse
Alder Moor
Maids' Garden Copse
Quob Farm
Webb's Land Farm
Dimmock's Moor
Quob Copse
Little Tapnage Farm
Tapnage
Sager's Down
Botley Wood
Tapnage Wood
Wickham Lodge Knowle
Birchfrith Copse
Martin's Copse
Fiddlers Green
Dandy Copse
Shaftesbury Copse
Blakes Copse
Aytesbury Copse
Dash Wood
Ravens Wood
Heytesbury Farm
Crockerhill
Lone Cottage
Everett's Coppice
Mushes Coppice
Flagpond Copse
Ash Farm
Mushes Plantation
Leachpond Copse
Stonyfield Copse
Knowle
Chalk Pit Farm House
Albany Farm
Pegham Coppice
Mill House
Great Fontley Farm
Long Acres Farm
Funtley Hill
River La
Gully Coppice
Chatsworth
River Meon
Funtley Rd
Three Meadows
Funtley
Berry Coppice
The Scotchcart Farmhouse
Bramble Cottage
Tichfield La
Gravel Pit Copse
A32
B2177
Knowle Rd

3G4022DS
3W8539DS
3W8534DS
3W8538HP
2G4003DS
2G4002DS
2G4004DS
3W8536SA
3W8535SA
3W8532HP
3W8530SA
3W8529SA
3W8528HP
3W8531HP
3W8526HP
3W8560HP
3W8567SA
3W8563TP
3W8558SA
2G4001SA
2G4000SA
2F3514DS
2F3537DS
2F3515DS
2F3513DS
2F3512RC

GCZ 15
GCZ 13
GCZ 14
GCZ 12

111000
110000
109000
455000
456000
457000

Project Boundary
Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area
GI Locations
Phase 2
Phase 3C

0 500 m

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Figure 3 f: Phase 1, 2 and 3a-c GI locations

X:\Projects\271400\Graphics_Office\Rep figs\GI\2024_10_07\271400ArcPro2\271400ArcPro2.aprx

3J5102HP
3J5101HP
3J5012HP
GCZ 19
3J5007DS
3J5004DS
3J5003HP
GCZ 18
2H4503DS
2H4502DS
3H4606HP
3J5002SA
3H4517SA
2H4500DR
2H4501DR
3H4515HP
3H4514HP
3H4513HP
GCZ 17b
3H4603HP
3H4511HP
3H4507HP
3H4602HP
3G4102SA
3H4600SA
3G4024DS
3G4023HP
GCZ 15
GCZ 17a
3G4106SA
3G4038DS
3G4105SA
3G7525IT
3G4022DS
3G4037DS
3W8539DS
3W8534DS
3W8538HP
GCZ 16

Spencer Place Farm
Middle Barn
Sandy La
Fir Copse
Long Acre Copse
Sandle's Copse
Lyons Copse
Marriot Meon Valley Hotel and Country Club
Solomons La
Black Horse La
Bishop's Hill House
Hawk's Nes
Shirrell Heath
Hospital Rd
Twynhams Hill
Newmans
Winchester Road
Southside Farm
Row Ash
Church Copse
St John's Church (remains of)
Shedfield
Church Rd
High St
Bigg's Copse
Upper Dagwells Copse
Hall Court Cottage
South Lodge
Shirrell Copse
Faerland
Cloverfield Farm
Close Wood
Frith La
Peatmoor
Frith Farm House
Little Brook Wood
Hallcourt Wood
Horse Wood
Brook Wood
The Farmhouse
Biddenfield Farm Cottages
The House
Redhill Copse
Northfields Farm House
Cutlers Copse
Blind La
Wilmots Bungalow
Gulley Copse
Biddenfield High Wood
Blacklands Copse
Tankerhill Copse
The Old Workshop
Lower Blacklands Copse
Titchfield La
Mill La
Deer Lodge
Rooksbury
Hangman's Copse
Alder Gully
Round Copse
Garden Copse
New Copse
Alder Moor
Wickham
River Meon
A334
A32
B2177

455000
456000
457000
458000
114000
113000
112000

Project Boundary
Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area
GI Locations
Phase 2
Phase 3B
Phase 3C
0
500 m

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Figure 3 g: Phase 1, 2 and 3a-c GI locations

X:\Projects\271400\Graphics_Office\Rep figs\GI\2024_10_07\271400ArcPro2\271400ArcPro2.aprx

Meadow View
Woodlea Nursery
Durley
3K5513HP
GCZ 23
3K5604HP
GCZ 22a
3K5511DS
Manor Rd
453000
454000
455000
456000
B2177
Newtown
B3035
Free St
Bishop's Waltham
Hoe Rd
Hoe
Shore La
or Farm
Tangier View Farm
Priory Park
117000
Thickets Farm
Botley Road
The Moors
Suetts Farm
Chase Moor Farm
Brooklands Farm
Ford Farm
GCZ 21
Park House
Paradise La
Freehills Farm
Locks Farm House
rm
River Hamble
116000
r's Copse
Brokes Copse
2K5501SR
Borderhill Stables
Treefield Farm
2K5500SR
3J5026HP
Harfields Bungalow
3J5025HP
Clewers Hill
Winchester Road
Glebe
3J5029DS
3J5024HP
3J5023HP
3J5028DS
GCZ 20
Foxburrow Copse
Maple Farm
Calcot La
Woodmans Farm
3J5027DS
Curridge La
Bull La
Waltham Chase
115000
Bay Tree House
3J5017HP
Nation's Farm
3J5016TP
3J5014TP
3J5015SA
GCZ 19
Oak Avenue
3J5013HP
3J5102HP
Great Gold Copse
Spencer Place Farm
3J5101HP
3J5012HP
B2177
Middle Barn
Solomons

Project Boundary
Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area
GI Locations
Phase 2
Phase 3B
Phase 3C
0
500 m

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Figure 3 h: Phase 1, 2 and 3a-c GI locations

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451000
452000
453000
454000
120000
119000
118000

B2177
B2127
B3037

Rowhay Farm
White Hill
Sweet Briar Cottage
Upham
Deeps Bushes Copse
Thistle Ridge Farm
Deeps Copse
Upham Copse
Cawtes Copse
Dell House
Bushy Copse
Newdeeps Farm
The Beeches
Upham St
Popes Farm
Stakes La
Peak La
Slappinrail Copse
Peak Copse
Tylers Copse
Blackmans Copse
Lower Upham
Footpath Copse
Stakes Farm
Hawthorns Farm
Winchester Road
Redlands Copse
Mount Pleasant Farm
King George Farm
Cross La
Woolstreet Farm
Alma La
Compton Cottage Farm
Cross Lanes Farm
Herons Foot Barn
Durley House
Coach House Cottage
Giles Farm
Broke Close Farm
Scivier's La
Trullingham Farm or Meadow View
Woodlea Nursery
Durley Street
Longlands Copse
Noyces Copse
Greenwood Manor
Parker's Copse
Newtown

3L6104HP
3L6103HP
3L6017HP
3L6102HP
3L6101DS
3L6015HP
3L6100HP
3L6013HP
GCZ 23
2K5503DS
2K5534DS
2K5535DS
2K5502DS
3K5610HP
3K5531DS
3K5609HP
3K5530HP
3K5529HP
3K5608HP
3K7546IT
3K5527DR
3K7545IT
3K5607HP
3K7544IT
3K5520CT
3K5541CT
3K5515HP
GCZ 22b
3K5606SA
3K5513HP
GCZ 22a
3K5604HP
3K5511DS
GCZ 21

Project Boundary
Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area
GI Locations
Phase 2
Phase 3B
Phase 3C

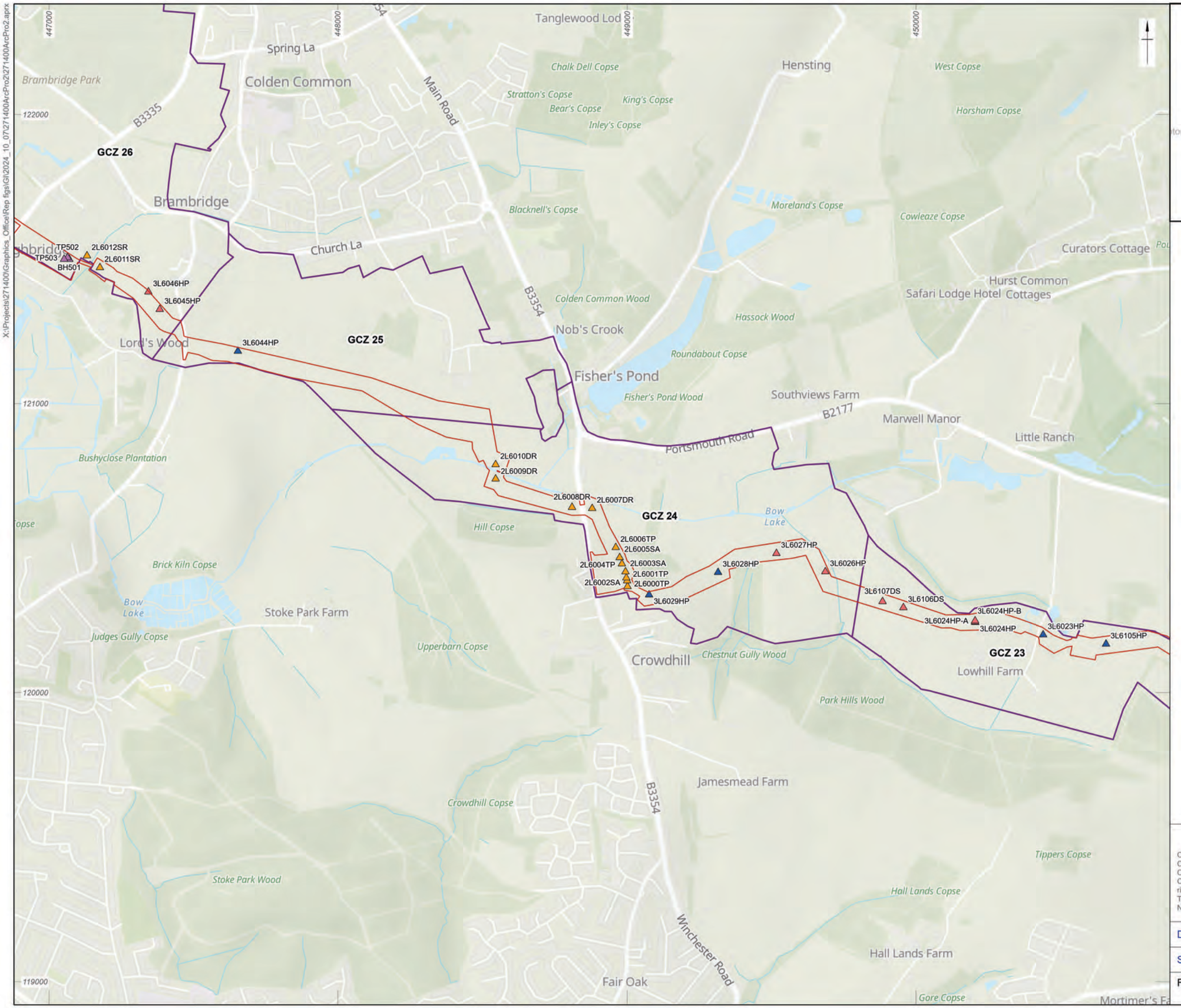
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Figure 3 i: Phase 1, 2 and 3a-c GI locations

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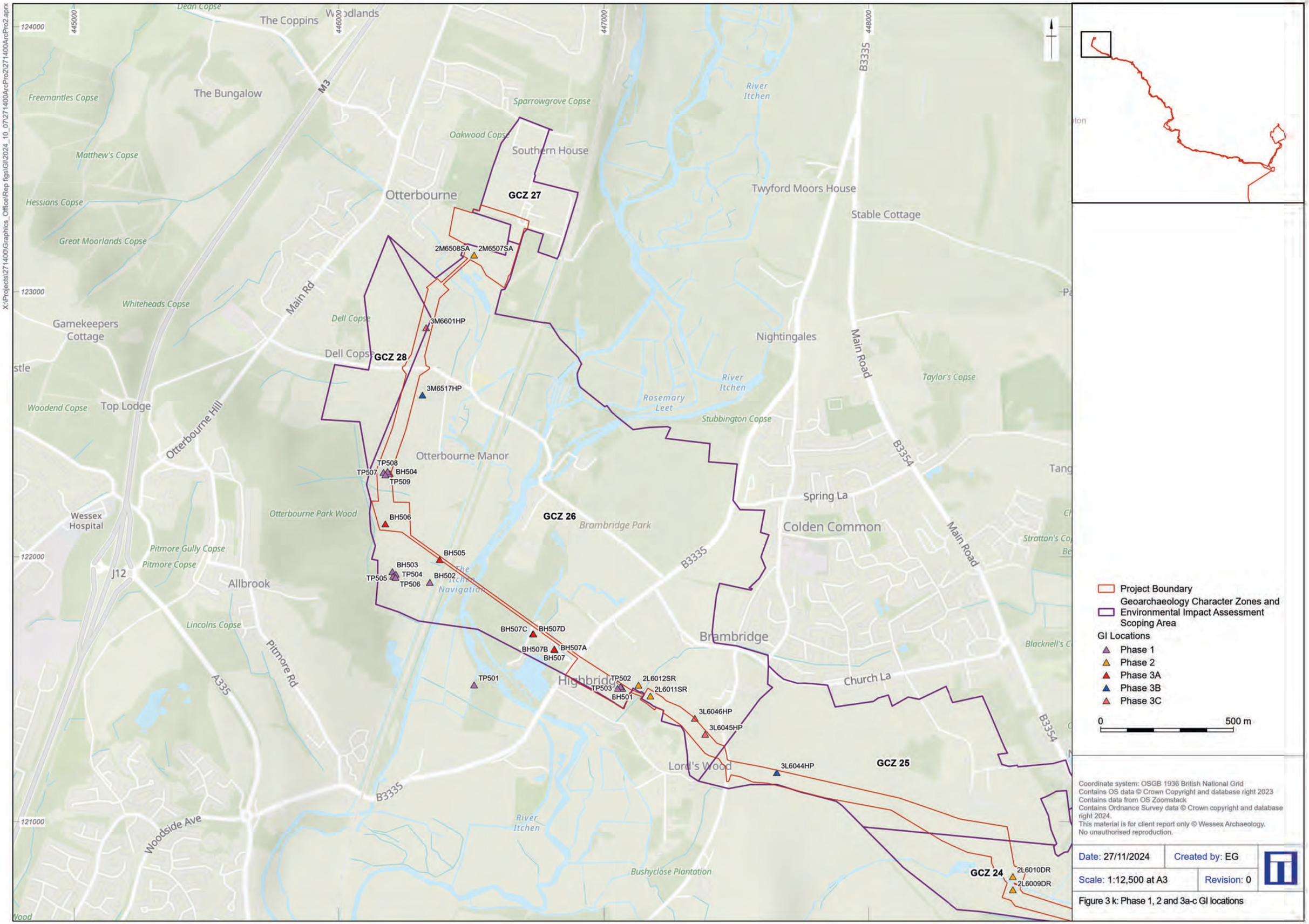


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Figure 3 j: Phase 1, 2 and 3a-c GI locations

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Figure 3 k: Phase 1, 2 and 3a-c GI locations

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470000
471000
472000
473000
111000
110000
109000

GCZ 1a
GCZ 3
GCZ 2
GCZ 1b

TP110
BH108
BH109
TP111

B2149
A3(M)
J3
B2150
Park La
Tempest Ave
Castle Rd
Redhill Rd
Durrants
B2148
Prospect La
Lock's Coppice
Wakeford's Way
Middle Park Way
Leigh Park

Project Boundary
Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area

GI Locations
- Phase 1

Solid geology
- NEWHAVEN CHALK FORMATION - CHALK
- TARRANT CHALK MEMBER - CHALK
- LAMBETH GROUP - CLAY, SILT AND SAND
- LAMBETH GROUP - SAND
- LONDON CLAY FORMATION - CLAY, SILT AND SAND
- NURSLING SAND MEMBER - CLAY, SILT AND SAND
- WHITECLIFF SAND MEMBER - SAND AND GRAVEL
- WITTERING FORMATION - SAND, SILT AND CLAY
- DURLEY SAND MEMBER - SAND
- WITTERING FORMATION - SAND
- PORTSDOWN CHALK FORMATION - CHALK
- LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION, NEWHAVEN CHALK FORMATION, CULVER CHALK FORMATION AND PORTSDOWN CHALK FORMATION (UNDIFFERENTIATED) - CHALK
- WHITECLIFF SAND MEMBER - SAND

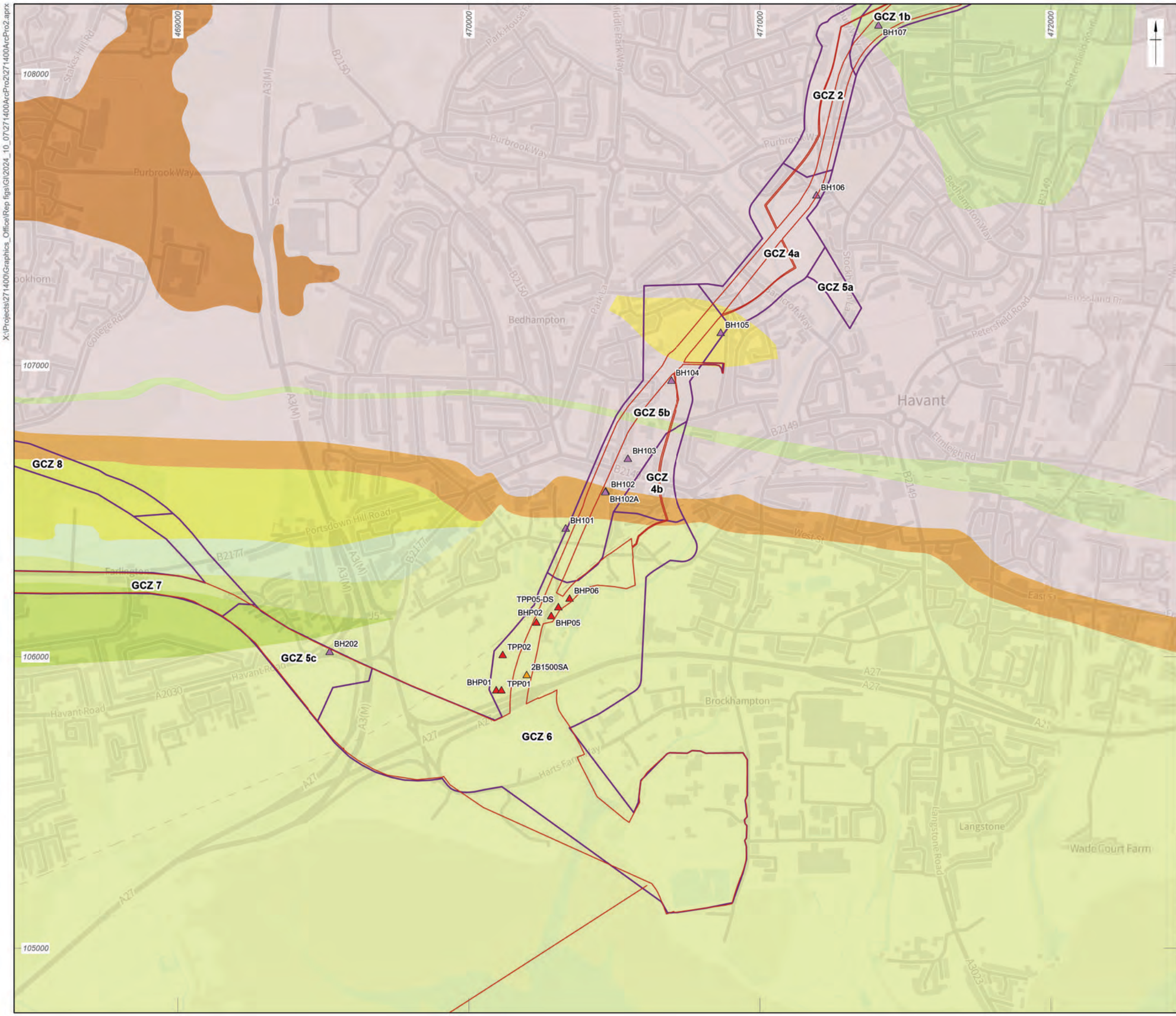
0 500 m

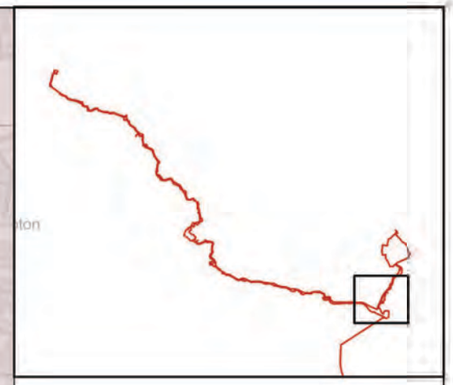
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Figure 4a: Solid geology

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Project Boundary

Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area

GI Locations

- Phase 1
- Phase 2
- Phase 3A

Solid geology

- NEWHAVEN CHALK FORMATION - CHALK
- TARRANT CHALK MEMBER - CHALK
- LAMBETH GROUP - CLAY, SILT AND SAND
- LAMBETH GROUP - SAND
- LONDON CLAY FORMATION - CLAY, SILT AND SAND
- NURSLING SAND MEMBER - CLAY, SILT AND SAND
- WHITECLIFF SAND MEMBER - SAND AND GRAVEL
- WITTERING FORMATION - SAND, SILT AND CLAY
- DURLEY SAND MEMBER - SAND
- WITTERING FORMATION - SAND
- PORTSDOWN CHALK FORMATION - CHALK
- LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION, NEWHAVEN CHALK FORMATION, CULVER CHALK FORMATION AND PORTSDOWN CHALK FORMATION (UNDIFFERENTIATED) - CHALK
- WHITECLIFF SAND MEMBER - SAND

0 500 m

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Figure 4b: Solid geology

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- Project Boundary
- Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area

GI Locations
- Phase 1
- Phase 2
- Phase 3B
- Phase 3C

Solid geology
- NEWHAVEN CHALK FORMATION - CHALK
- TARRANT CHALK MEMBER - CHALK
- LAMBETH GROUP - CLAY, SILT AND SAND
- LAMBETH GROUP - SAND
- LONDON CLAY FORMATION - CLAY, SILT AND SAND
- NURSLING SAND MEMBER - CLAY, SILT AND SAND
- WHITECLIFF SAND MEMBER - SAND AND GRAVEL
- WITTERING FORMATION - SAND, SILT AND CLAY
- DURLEY SAND MEMBER - SAND
- WITTERING FORMATION - SAND
- PORTSDOWN CHALK FORMATION - CHALK
- LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION, NEWHAVEN CHALK FORMATION, CULVER CHALK FORMATION AND PORTSDOWN CHALK FORMATION (UNDIFFERENTIATED) - CHALK
- WHITECLIFF SAND MEMBER - SAND

0 500 m

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Figure 4c: Solid geology

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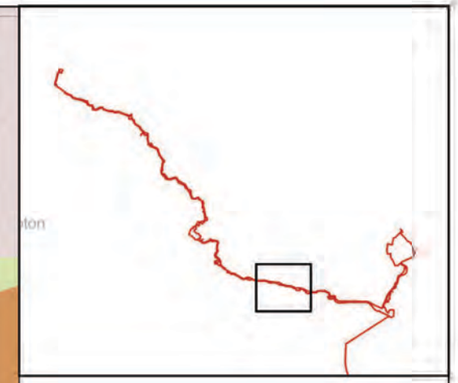
461000 462000 463000 464000

108000 107000 106000

Southwick
Back La
West St
High St
Ham Farm
Ham Rd
Keepers Cottage
Hamilton Rd
B2177
Compthouse Farm
Hookhills Burrs
Offwell Farm
Pindley Lodge
New Barns Farm
Monument La
Portsdown Hill Rd
Nelson La
Skew Rd
James Callaghan Dr
M27
Hill Rd
Portsview Ave
Jubilee Ave
Allaway Ave
Paulsgrove
Portchester
A27

GCZ 9
GCZ 8

3E3036DS
3E3035DS
3E3034HP
3E3115DS
3E3114DS
3E3113HP
3E3112TP
3E3119HP
3E3028HP
3E3111HP
3E3110DS
3E3109HP
3E3108TP
3E3023TP
3E3021DS
3E3022HP
3E3020DS
3E3019DS



Project Boundary
Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area
Phase 3C

Solid geology
- NEWHAVEN CHALK FORMATION - CHALK
- TARRANT CHALK MEMBER - CHALK
- LAMBETH GROUP - CLAY, SILT AND SAND
- LAMBETH GROUP - SAND
- LONDON CLAY FORMATION - CLAY, SILT AND SAND
- NURSLING SAND MEMBER - CLAY, SILT AND SAND
- WHITECLIFF SAND MEMBER - SAND AND GRAVEL
- WITTERING FORMATION - SAND, SILT AND CLAY
- DURLEY SAND MEMBER - SAND
- WITTERING FORMATION - SAND
- PORTSDOWN CHALK FORMATION - CHALK
- LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION, NEWHAVEN CHALK FORMATION, CULVER CHALK FORMATION AND PORTSDOWN CHALK FORMATION (UNDIFFERENTIATED) - CHALK
- WHITECLIFF SAND MEMBER - SAND

0 500 m

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Figure 4d: Solid geology

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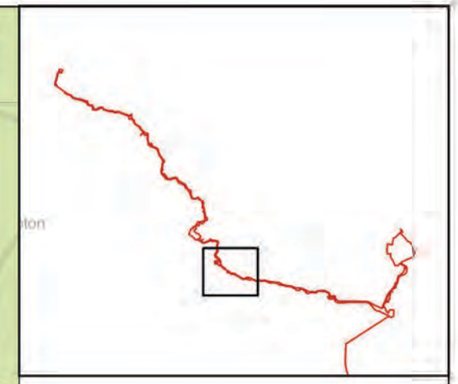
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110000 109000 108000 107000

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3W8567SA
3W8559TP
3W8563TP
3W8558SA
3W8556DS
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2F3513DS
2F3512RC
3W8554DS
3W8553DS
3F7512IT
3F7510IT
3F7509IT
2F3505DS
3F7513IT
2F3504DS
3F3602HP
3F3521HP
2F3503SA
2F3502SA
3F3519HP
3F3601HP
2F3501DS
3E3117DS
2F3500DS
3E3038HP

GCZ 14
GCZ 13
GCZ 12
GCZ 11
GCZ 10
GCZ 9
GCZ 8

Crockerhill Farm
Misty Hollow
Heytesbury Farm
Crockerhill
Prior's Hold Farm
Bere Farm
Chalk Pit Farm House
Albany Farm
Boarhunt Mill
The Scotchcart Farmhouse
Boarhunt
The Lodge
North Fareham
Monument Farm
Fort Nelson
Wallington
M27
J10
J11
A32
Old Turnpike
Park La
Rook La
Nine Elms La
Spurlings Rd
Boarhunt Rd
Portsdown Hill Rd



- Project Boundary
- Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area
- Phase 2
- Phase 3C

Solid geology

- NEWHAVEN CHALK FORMATION - CHALK
- TARRANT CHALK MEMBER - CHALK
- LAMBETH GROUP - CLAY, SILT AND SAND
- LAMBETH GROUP - SAND
- LONDON CLAY FORMATION - CLAY, SILT AND SAND
- NURSLING SAND MEMBER - CLAY, SILT AND SAND
- WHITECLIFF SAND MEMBER - SAND AND GRAVEL
- WITTERING FORMATION - SAND, SILT AND CLAY
- DURLEY SAND MEMBER - SAND
- WITTERING FORMATION - SAND
- PORTSDOWN CHALK FORMATION - CHALK
- LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION, NEWHAVEN CHALK FORMATION, CULVER CHALK FORMATION AND PORTSDOWN CHALK FORMATION (UNDIFFERENTIATED) - CHALK
- WHITECLIFF SAND MEMBER - SAND

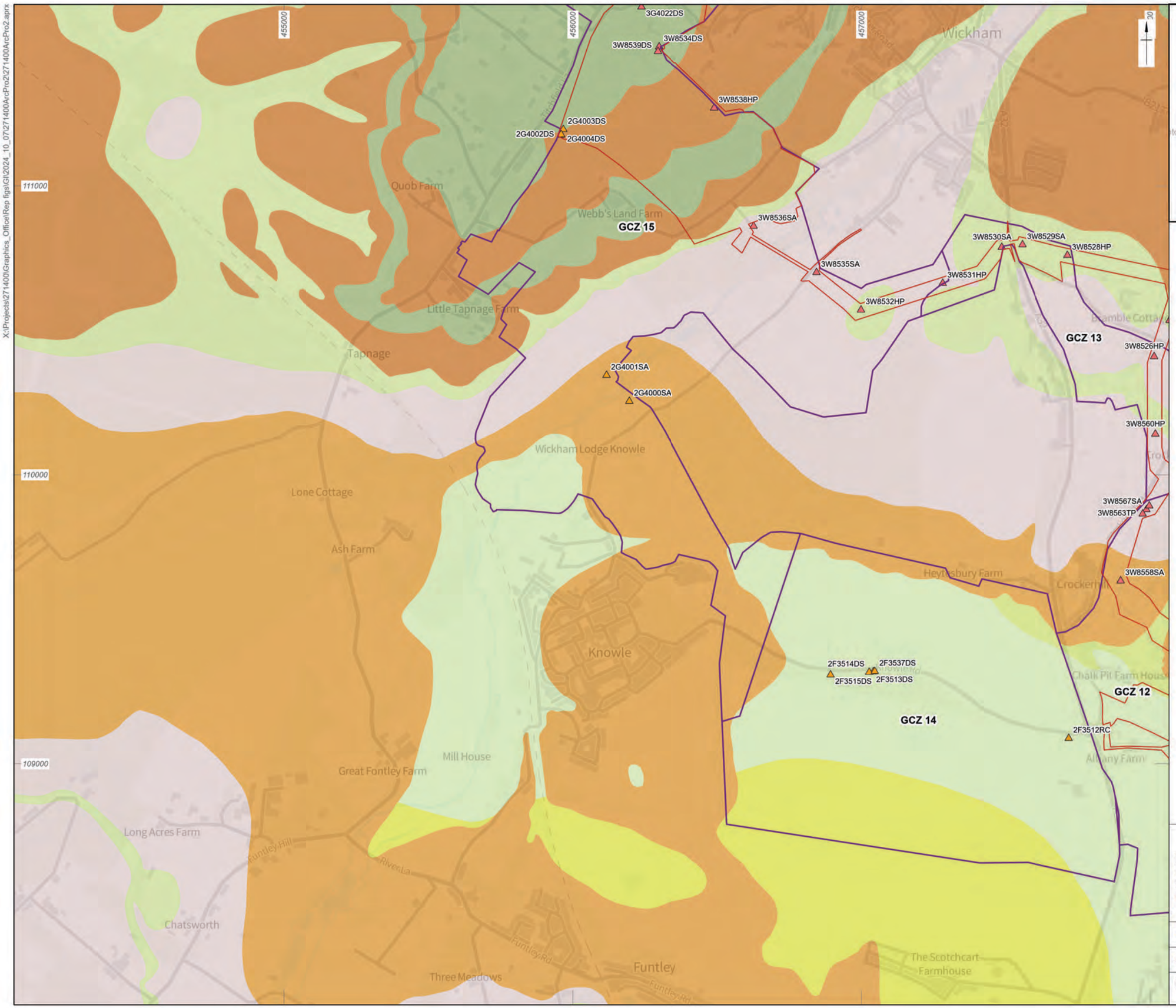
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Figure 4e: Solid geology

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Figure 4f: Solid geology

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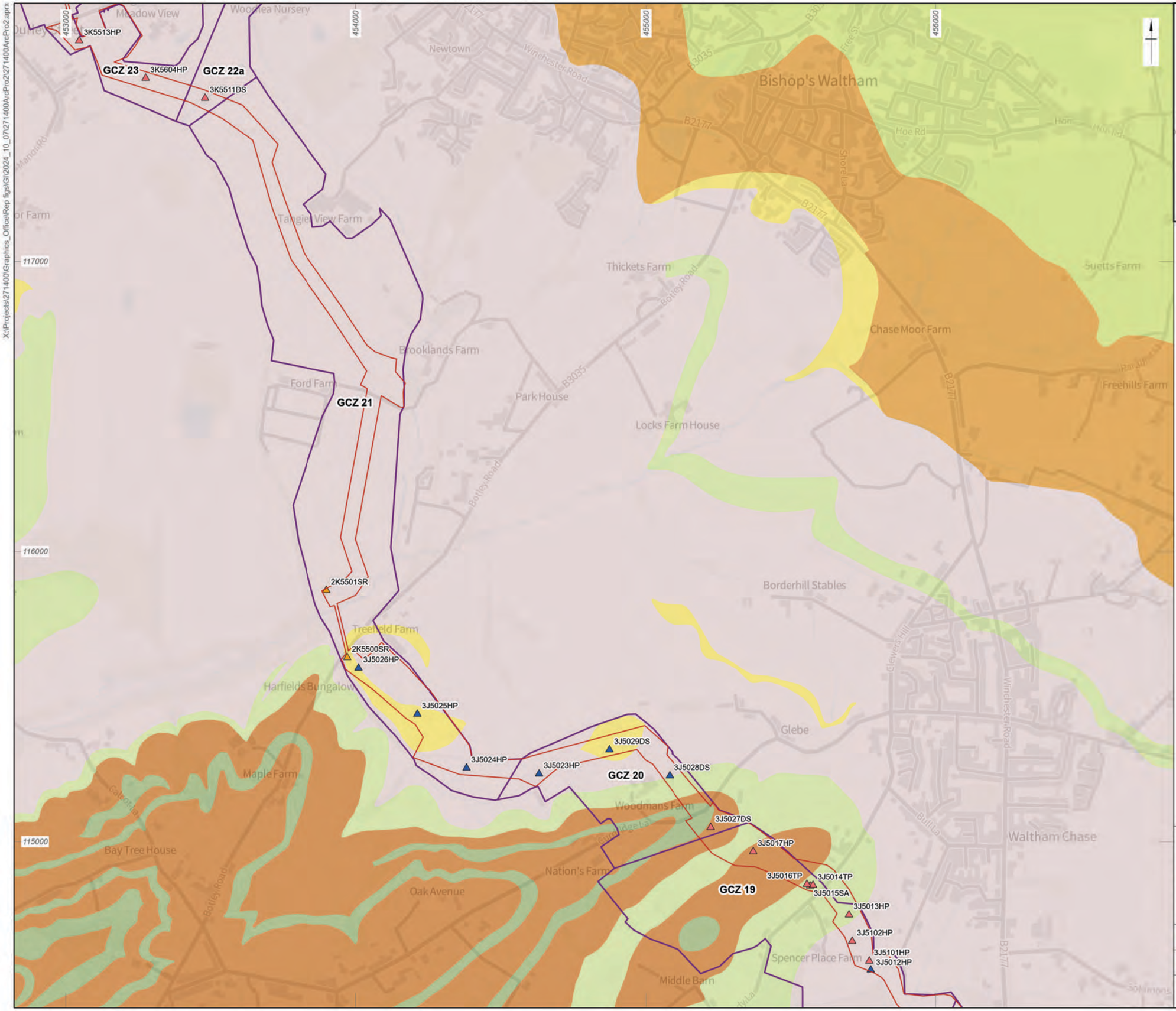
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Figure 4g: Solid geology

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Figure 4h: Solid geology

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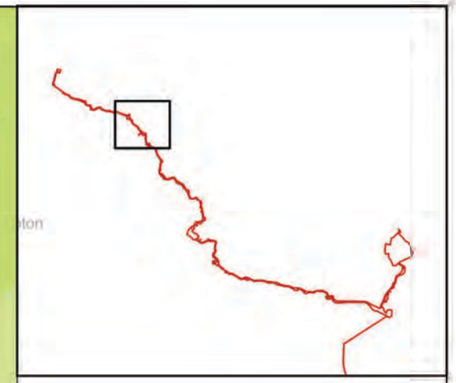
451000 452000 453000 454000

120000 119000 118000

B2177 B3037

Sweet Briar Cottage
Upham
Thistle Ridge Farm
Dell House
Newdeeps Farm
Popes Farm
Lower Upham
Stakes Farm
Hawthorns Farm
Mount Pleasant
King George Farm
Woolstreet Farm
Compton Cottage Farm
Cross Lanes Farm
Durley House
Wildwood
Herons Foot Barn
Coach House Cottage
Horton Farm
Giles Farm
Broke Close Farm
Durley Hall Lane
Trullingham Farm or Meadow View
Woodlea Nursery
Durley Street
Greenwood Manor
Newtown
Winchester Road

3L6104HP
3L6103HP
3L6017HP
3L6102HP
3L6101DS
3L6015HP
3L6100HP
3L6013HP
GCZ 23
2K5503DS
2K5534DS
2K5535DS
2K5502DS
3K5610HP
3K5531DS
3K5609HP
3K5530HP
3K5529HP
3K5608HP
3K7546IT
3K5527DR
3K7545IT
3K7544IT
3K5607HP
3K5520CT
3K5541CT
3K5515HP
GCZ 22b
3K5606SA
3K5513HP
GCZ 22a
3K5604HP
3K5511DS
GCZ 21



Project Boundary
Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area
Phase 2
Phase 3B
Phase 3C

Solid geology

- NEWHAVEN CHALK FORMATION - CHALK
- TARRANT CHALK MEMBER - CHALK
- LAMBETH GROUP - CLAY, SILT AND SAND
- LAMBETH GROUP - SAND
- LONDON CLAY FORMATION - CLAY, SILT AND SAND
- NURSLING SAND MEMBER - CLAY, SILT AND SAND
- WHITECLIFF SAND MEMBER - SAND AND GRAVEL
- WITTERING FORMATION - SAND, SILT AND CLAY
- DURLEY SAND MEMBER - SAND
- WITTERING FORMATION - SAND
- PORTSDOWN CHALK FORMATION - CHALK
- LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION, NEWHAVEN CHALK FORMATION, CULVER CHALK FORMATION AND PORTSDOWN CHALK FORMATION (UNDIFFERENTIATED) - CHALK
- WHITECLIFF SAND MEMBER - SAND

0 500 m

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Figure 4i: Solid geology

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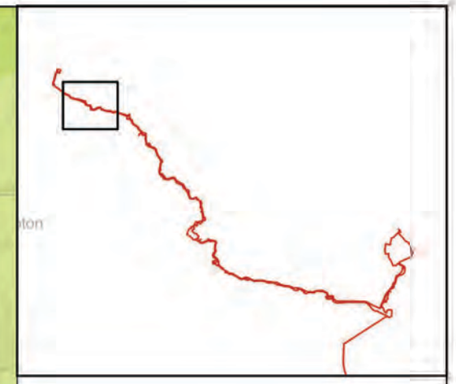
447000 448000 449000 450000

122000 121000 120000 119000

Tanglewood Lodge
Spring La
Colden Common
Main Road
B3335
Hensting
Tees Farm Rd
Brambridge
Church La
B3354
Curators Cottage
Safari Lodge Hotel
Nob's Crook
Lord's Wood
Fisher's Pond
Southviews Farm
B2177
Marwell Manor
Little Ranch
Stoke Park Farm
Crowdhill
Lowhill Farm
Jamesmead Farm
Hall Lands Farm
Fair Oak
Winchester Road
Mortimer's Farm

GCZ 26
GCZ 25
GCZ 24
GCZ 23

TP502
TP503
BH501
2L6012SR
2L6011SR
3L6046HP
3L6045HP
3L6044HP
2L6010DR
2L6009DR
2L6008DR
2L6007DR
2L6006TP
2L6005SA
2L6004TP
2L6003SA
2L6001TP
2L6002SA
2L6000TP
3L6029HP
3L6028HP
3L6027HP
3L6026HP
3L6107DS
3L6106DS
3L6024HP-A
3L6024HP-B
3L6024HP
3L6023HP
3L6105HP



Project Boundary
Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area

GI Locations
- Phase 1
- Phase 2
- Phase 3B
- Phase 3C

Solid geology
- NEWHAVEN CHALK FORMATION - CHALK
- TARRANT CHALK MEMBER - CHALK
- LAMBETH GROUP - CLAY, SILT AND SAND
- LAMBETH GROUP - SAND
- LONDON CLAY FORMATION - CLAY, SILT AND SAND
- NURSLING SAND MEMBER - CLAY, SILT AND SAND
- WHITECLIFF SAND MEMBER - SAND AND GRAVEL
- WITTERING FORMATION - SAND, SILT AND CLAY
- DURLEY SAND MEMBER - SAND
- WITTERING FORMATION - SAND
- PORTSDOWN CHALK FORMATION - CHALK
- LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION, NEWHAVEN CHALK FORMATION, CULVER CHALK FORMATION AND PORTSDOWN CHALK FORMATION (UNDIFFERENTIATED) - CHALK
- WHITECLIFF SAND MEMBER - SAND

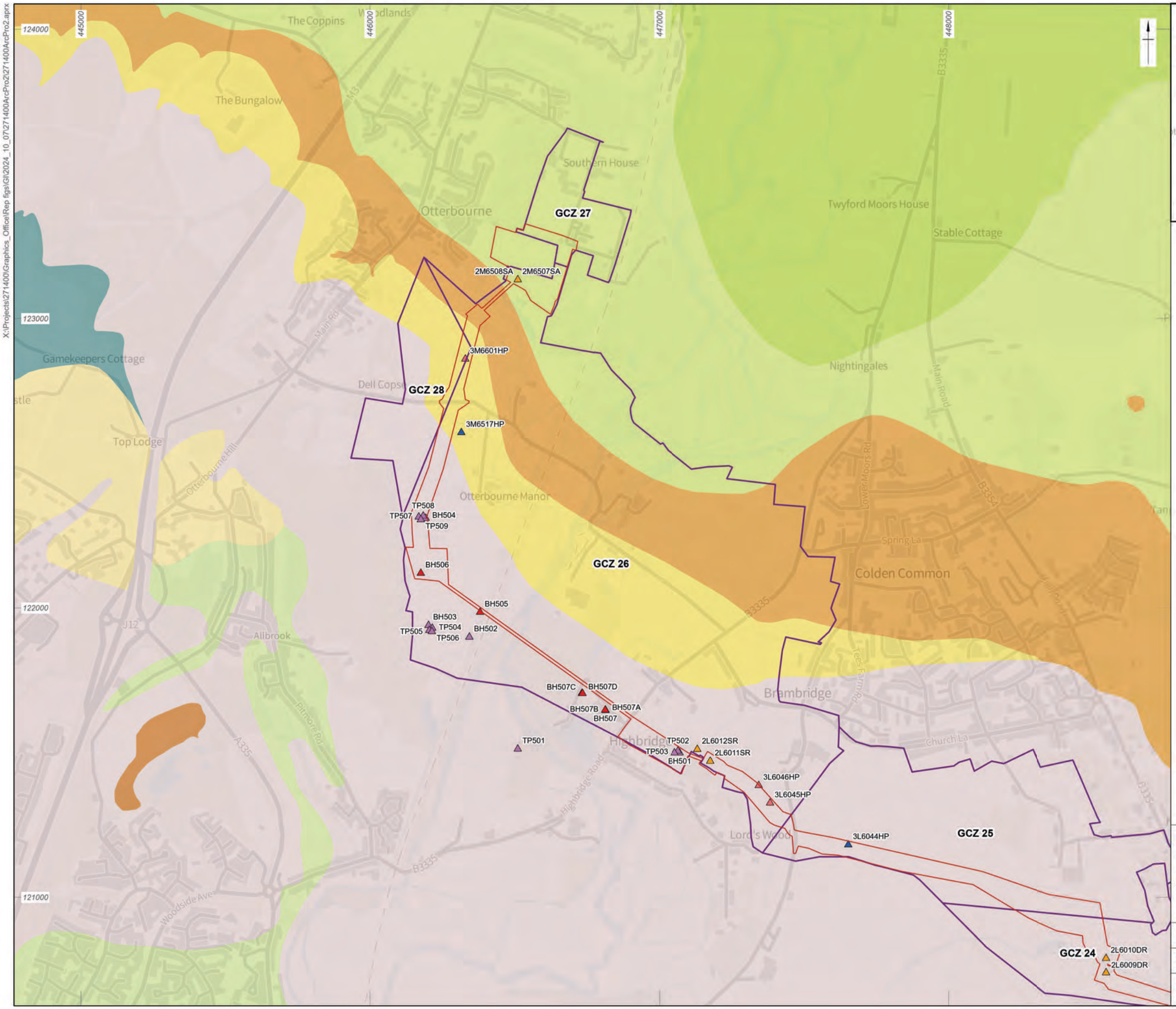
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Figure 4j: Solid geology

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Project Boundary

Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area

GI Locations

- Phase 1
- Phase 2
- Phase 3A
- Phase 3B
- Phase 3C

Solid geology

- NEWHAVEN CHALK FORMATION - CHALK
- TARRANT CHALK MEMBER - CHALK
- LAMBETH GROUP - CLAY, SILT AND SAND
- LAMBETH GROUP - SAND
- LONDON CLAY FORMATION - CLAY, SILT AND SAND
- NURSLING SAND MEMBER - CLAY, SILT AND SAND
- WHITECLIFF SAND MEMBER - SAND AND GRAVEL
- WITTERING FORMATION - SAND, SILT AND CLAY
- DURLEY SAND MEMBER - SAND
- WITTERING FORMATION - SAND
- PORTSDOWN CHALK FORMATION - CHALK
- LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION, NEWHAVEN CHALK FORMATION, CULVER CHALK FORMATION AND PORTSDOWN CHALK FORMATION (UNDIFFERENTIATED) - CHALK
- WHITECLIFF SAND MEMBER - SAND

0 500 m

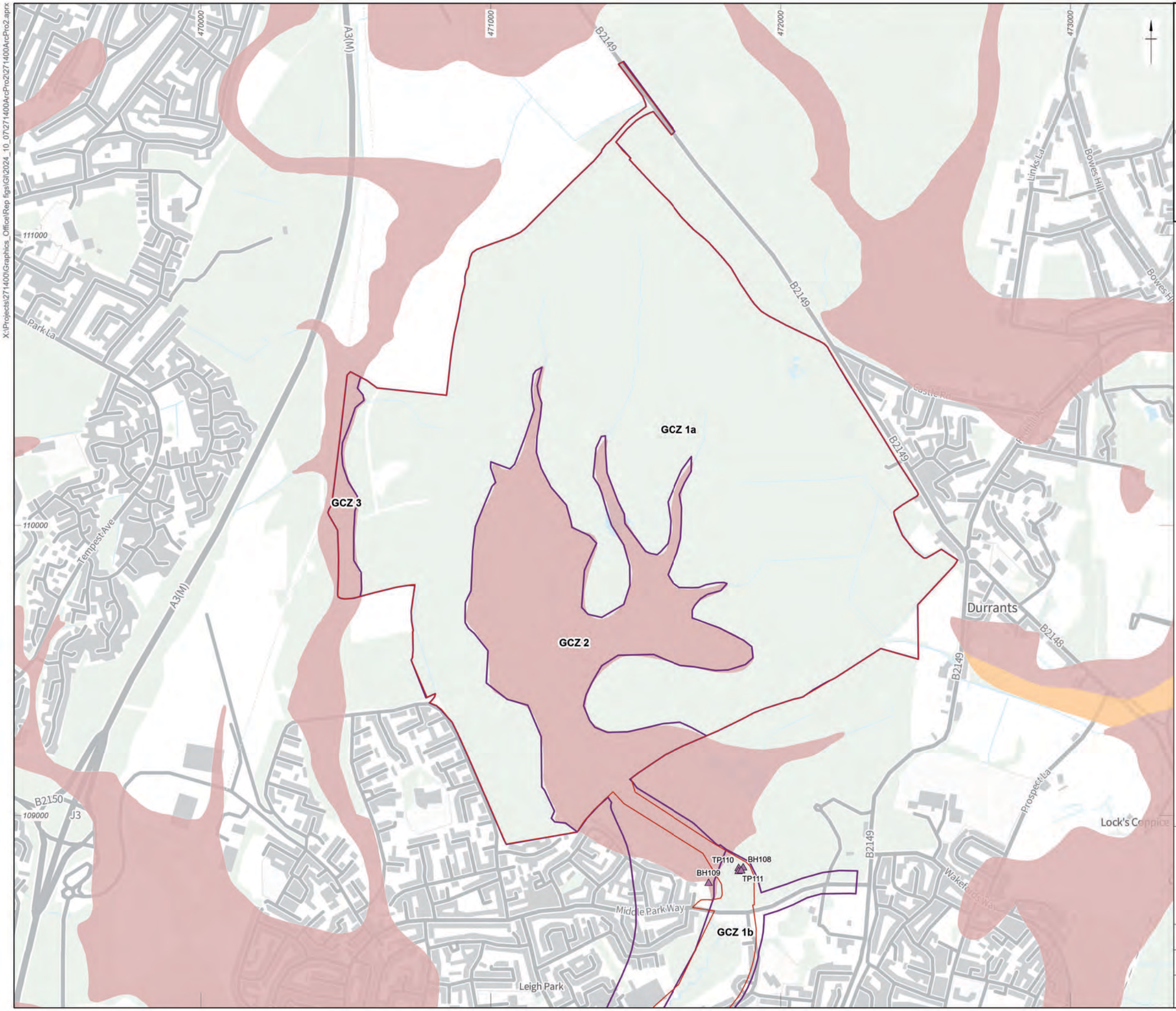
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Figure 4k: Solid geology

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Project Boundary

Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area

GI Locations

Phase 1

Superficial geology

HEAD - CLAY, SILT, SAND AND GRAVEL

ALLUVIUM - CLAY, SILT, SAND AND GRAVEL

RIVER TERRACE DEPOSITS, GRAVEL, SAND AND SILT

RAISED MARINE DEPOSITS - SAND AND GRAVEL

RAISED MARINE DEPOSITS - SAND AND GRAVEL

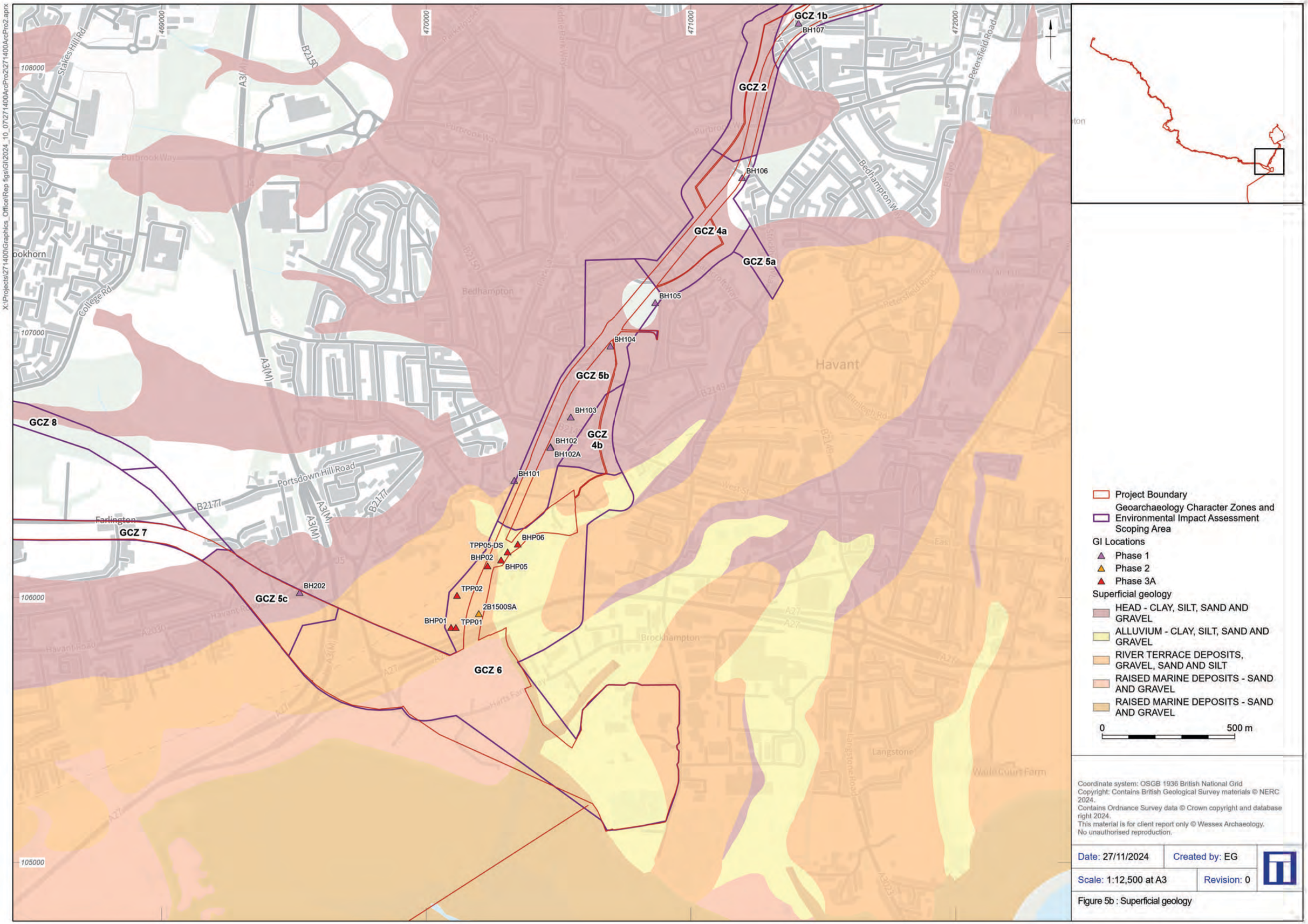
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Figure 5a : Superficial geology



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Figure 5b : Superficial geology

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Figure 5c : Superficial geology

X:\Projects\271400\Graphics_Office\Rep figs\GI\2024_10_07\271400ArcPro2\271400ArcPro2.aprx

461000 462000 463000 464000

108000 107000 106000

Southwick

Ham Farm

Keepers Cottage

West St

High St

Backs

Ham La

B2177

Compthouse Farm

Offwell Farm

Monument La

Portsdown Hill Rd

Nelson La

Skew Rd

James Callaghan Dr

M27

Hill Rd

Portsview Ave

Jubilee Ave

Allaway Ave

Paulsgrove

Portchester

A27

Pinsley Lodge

New Barns Farm

Looked Wall La

Pigeon House

GCZ 9

GCZ 8

3E3036DS
3E3035DS
3E3034HP
3E3115DS
3E3114DS
3E3113HP
3E3112TP
3E3119HP
3E3028HP
3E3111HP
3E3110DS
3E3109HP
3E3108TP
3E3023TP
3E3022HP
3E3021DS
3E3020DS
3E3019DS

Project Boundary

Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area

Phase 3C

Superficial geology

HEAD - CLAY, SILT, SAND AND GRAVEL

ALLUVIUM - CLAY, SILT, SAND AND GRAVEL

RIVER TERRACE DEPOSITS, GRAVEL, SAND AND SILT

RAISED MARINE DEPOSITS - SAND AND GRAVEL

RAISED MARINE DEPOSITS - SAND AND GRAVEL

0 500 m

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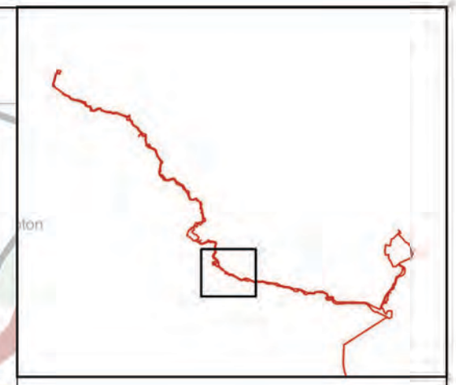
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Figure 5d : Superficial geology

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458000
459000
460000
110000
109000
108000
107000

3W8560HP
Crockerhill Farm
3W8567SA
3W8559TP
3W8563TP
3W8558SA
Heytesbury Farm
Crockerhill
3W8556DS
2F3537DS
2F3513DS
Arundel Rd
Chalk Pit Farm House
GCZ 14
2F3512RC
3W8554DS
3W8553DS
3F7512IT
3F7510IT
Albany Farm
2F3505DS
3F7509IT
3F7513IT
2F3504DS
3F3602HP
A32
3F3521HP
2F3503SA
GCZ 12
2F3502SA
edell Farm
3F3519HP
3F3601HP
The Scotchcart Farmhouse
GCZ 8
Boarhunt
2F3501DS
3E3117DS
The Lodge
2F3500DS
North Fareham
3E3038HP
M27
J10
Park La
Old Turnpike
Boarhunt Rd
Monument Farm
Standard Way
M27
J11
Fort Nelson
Portsdown Hill Rd
Wallington
Misty Hollow
GCZ 13
GCZ 11
Prior's Hold Farm
GCZ 10
Carmans Farm
Bere Farm
GCZ 9
Boarhunt Mill
Ashley Down La
Monument La



Project Boundary
Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area
Phase 2
Phase 3C

Superficial geology

HEAD - CLAY, SILT, SAND AND GRAVEL
ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
RIVER TERRACE DEPOSITS, GRAVEL, SAND AND SILT
RAISED MARINE DEPOSITS - SAND AND GRAVEL
RAISED MARINE DEPOSITS - SAND AND GRAVEL

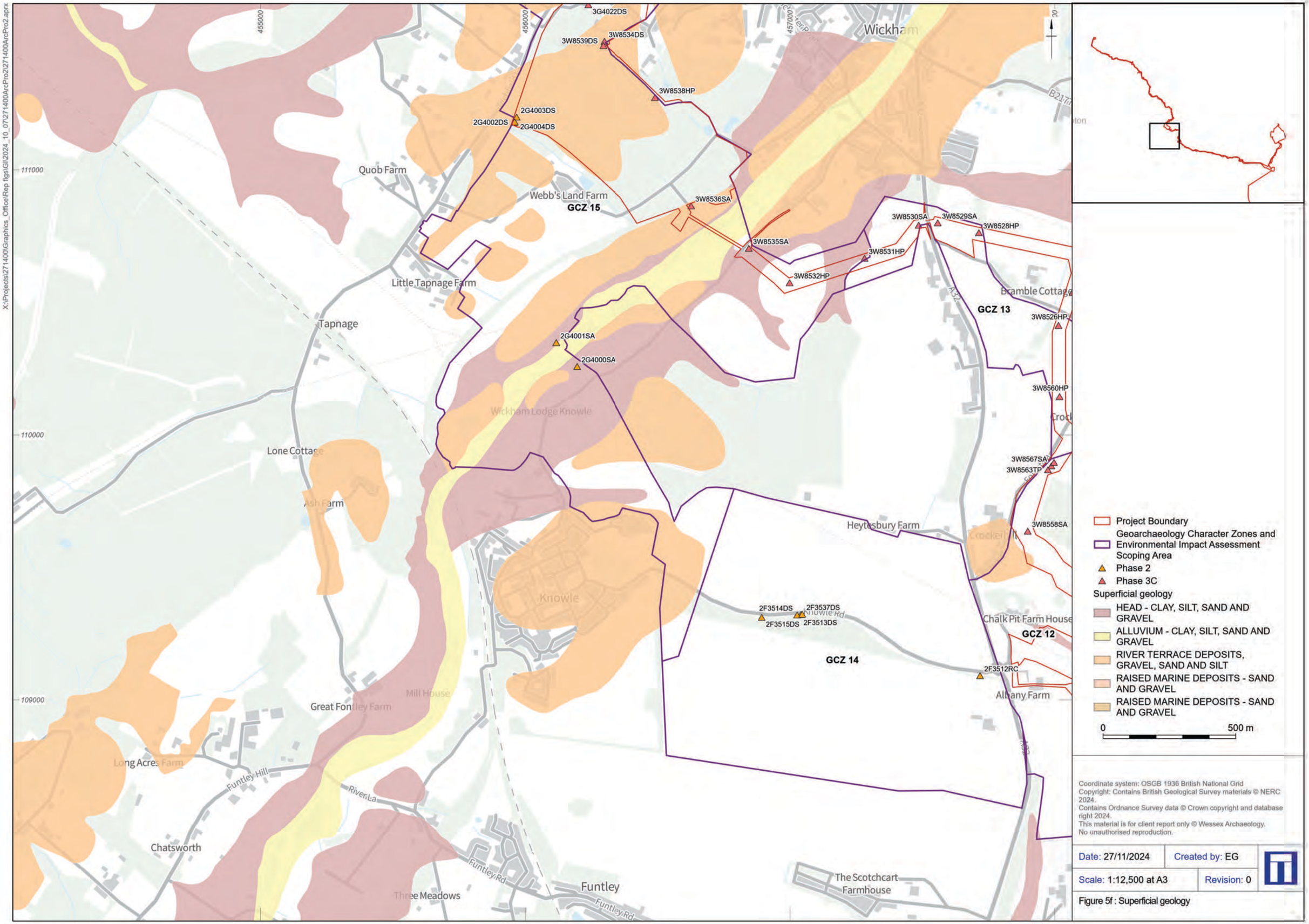
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Figure 5e : Superficial geology

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Figure 5f : Superficial geology

X:\Projects\271400\Graphics_Office\Rep figs\GI\2024_10_07\271400ArcPro2\271400ArcPro2.aprx

GCZ 19
GCZ 18
GCZ 17b
GCZ 17a
GCZ 16
GCZ 15

3J5102HP
3J5101HP
3J5012HP
3J5007DS
3J5004DS
3J5003HP
3J5002SA
3H4517SA
3H4606HP
2H4503DS
2H4502DS
2H4500DR
2H4501DR
3H4515HP
3H4514HP
3H4513HP
3H4603HP
3H4511HP
3H4507HP
3H4602HP
3H4600SA
3G4102SA
3G4024DS
3G4023HP
3G4106SA
3G4105SA
3G4038DS
3G7525IT
3G4022DS
3G4037DS
3W8534DS
3W8539DS
3W8538HP

Spencer Place Farm
Middle Barn
Lyons Copse
Woodman's Paddock
Marriot Meon Valley Hotel and Country Club
Southside Farm
Row Ash
St John's Church (remains of)
Shedfield
Hall Court Cottage
Bishop's Hill House
Solomons La
Shirrell Heath
Winters Rd
Hospital Rd
High St
Twynhams Hill
Newmans Hill
South Lodge
Faerland
Frith Farm House
Frith La
Northfields Farm House
Northfields Cottage
Bungalow
Blind La
The Farmhouse
Biddenfield Farm Cottages
The House
The Old Workshop
Deer Lodge
Rooksbury P
Wickham
Church Rd
A334
B2177
Winchester Rd

455000
456000
457000
458000
114000
113000
112000

Project Boundary
Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area
Phase 2
Phase 3B
Phase 3C

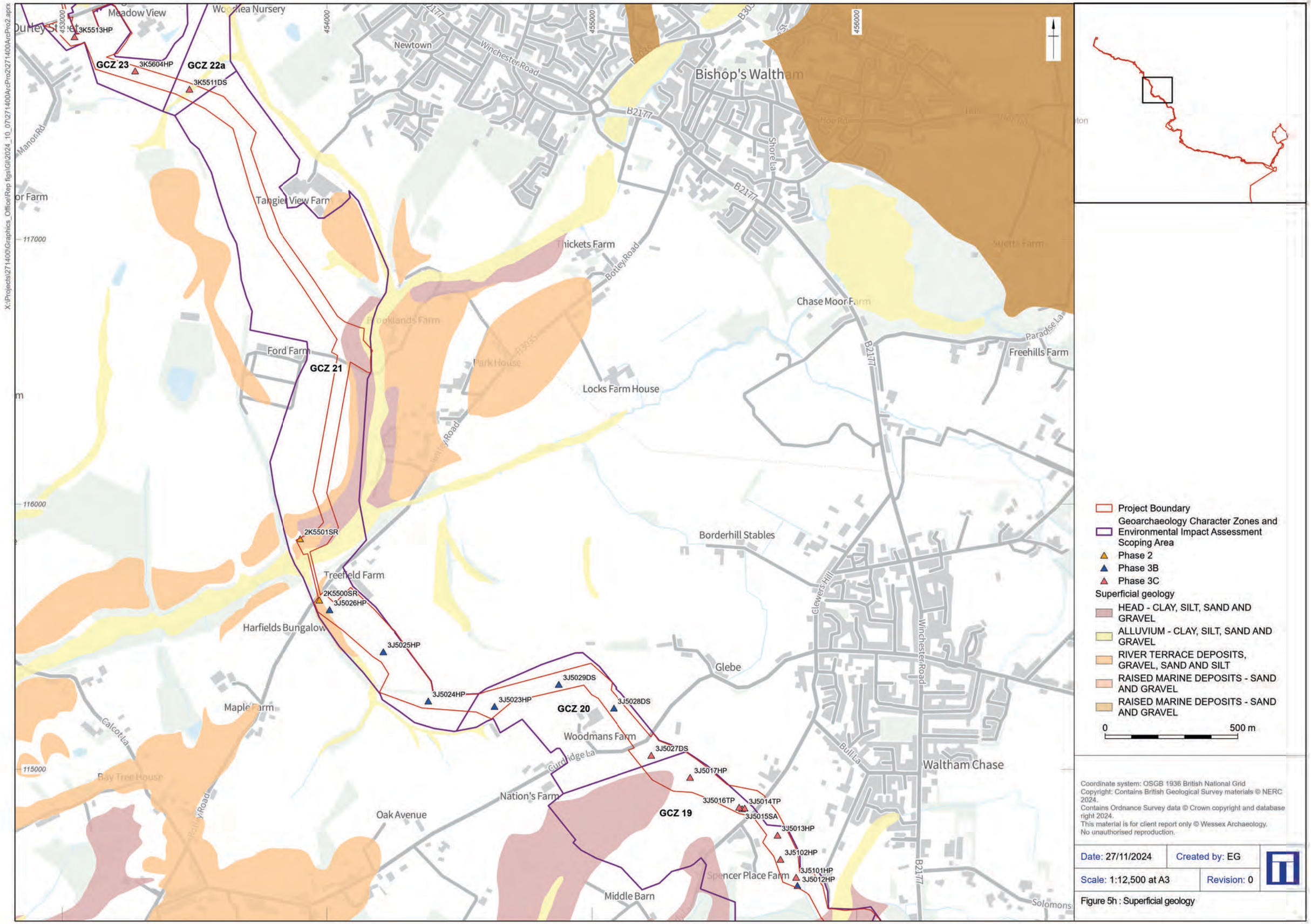
Superficial geology
HEAD - CLAY, SILT, SAND AND GRAVEL
ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
RIVER TERRACE DEPOSITS, GRAVEL, SAND AND SILT
RAISED MARINE DEPOSITS - SAND AND GRAVEL
RAISED MARINE DEPOSITS - SAND AND GRAVEL

0 500 m

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Figure 5g : Superficial geology



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Figure 5h : Superficial geology

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451000
452000
453000
454000
120000
119000
118000

B2177
B3037
Thistle Ridge Farm
Sweet Briar Cottage
Upham
Dell House
Newdeeps Farm
Popes Farm
Upham's La
Stakes La
Stakes Farm
Woodwood La
Lower Upham
Hawthorns Farm
Mount Pleasant Farm
Winchester Road
King George Farm
Woolstreet Farm
Alma La
Compton Cottage Farm
Wildwood
Herons Foot Barn
Coach House Cottage
Durley House
Horton Farm
Giles Farm
Broke Close Farm
Durley Hall La
Scriven's La
Trullingham Farm or Meadow View
Durley Street
Woodlea Nursery
Greenwood Manor
Newtown

3L6104HP
3L6103HP
3L6017HP
3L6102HP
3L6101DS
3L6015HP
3L6100HP
3L6013HP
GCZ 23
2K5503DS
2K5534DS
2K5535DS
2K5502DS
3K5610HP
3K5531DS
3K5609HP
3K5530HP
3K5529HP
3K5608HP
3K7546IT
3K5527DR
3K7545IT
3K7544IT
3K5520CT
3K5541CT
3K5607HP
3K5515HP
GCZ 22b
3K5606SA
3K5513HP
GCZ 22a
3K5604HP
3K5511DS
GCZ 21

Project Boundary
Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area
Phase 2
Phase 3B
Phase 3C

Superficial geology
HEAD - CLAY, SILT, SAND AND GRAVEL
ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
RIVER TERRACE DEPOSITS, GRAVEL, SAND AND SILT
RAISED MARINE DEPOSITS - SAND AND GRAVEL
RAISED MARINE DEPOSITS - SAND AND GRAVEL

0 500 m

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Figure 5i : Superficial geology

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447000 448000 449000 450000

122000 121000 120000 119000

GCZ 26

GCZ 25

GCZ 24

GCZ 23

Colden Common

Brambridge

Lord's Wood

Tanglewood Lodge

Hensting

Curators Cottage

Safari Lodge Hotel

Nob's Crook

Fisher's Pond

Southviews Farm

Marwell Manor

Little Ranch

Portsmouth Road

Church La

Main Road

B3335

B3354

B2177

Stoke Park Farm

Crowdhill

Jamesmead Farm

Lowhill Farm

Hall Lands Farm

Fair Oak

Winchester

Mortimer's Fa

TP502
TP503
BH501
2L6012SR
2L6011SR
3L6046HP
3L6045HP
3L6044HP
2L6010DR
2L6009DR
2L6008DR
2L6007DR
2L6006TP
2L6005SA
2L6004TP
2L6003SA
2L6001TP
2L6002SA
2L6000TP
3L6029HP
3L6028HP
3L6027HP
3L6026HP
3L6107DS
3L6106DS
3L6024HP-B
3L6024HP-A
3L6024HP
3L6023HP
3L6105HP

Project Boundary

Geoarchaeology Character Zones and Environmental Impact Assessment Scoping Area

GI Locations

- Phase 1
- Phase 2
- Phase 3B
- Phase 3C

Superficial geology

- HEAD - CLAY, SILT, SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS, GRAVEL, SAND AND SILT
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- RAISED MARINE DEPOSITS - SAND AND GRAVEL

0 500 m

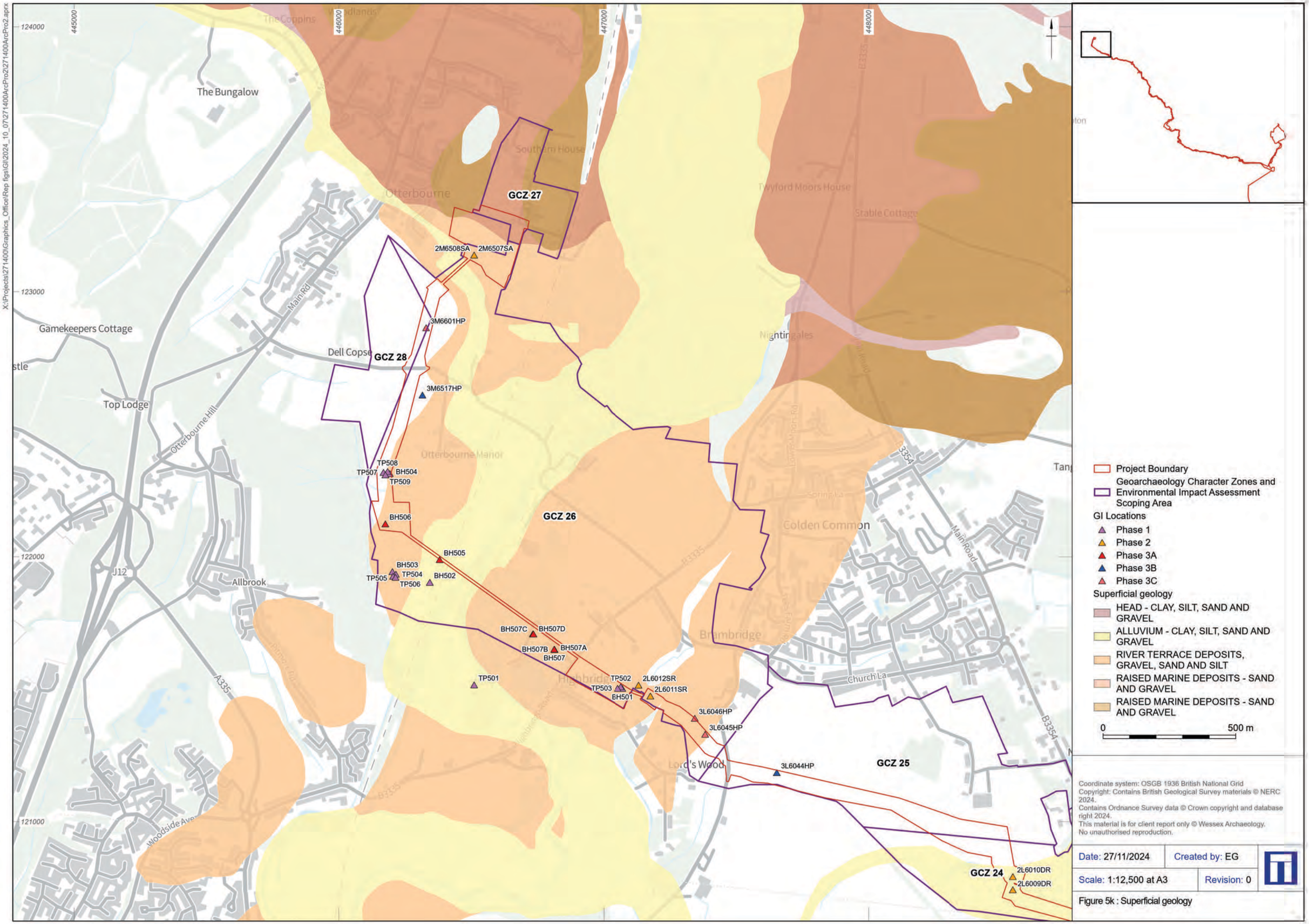
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Figure 5j : Superficial geology

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Figure 5k : Superficial geology

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GCZ 1a

GCZ 3

GCZ 2

GCZ 1b

GCZ 4a

SU70NW318
SU70NW323
SU70NW324
SU70NW320
SU70NW321
SU70NW322
SU70NW319
TP110
BH108
BH109
TP111
BH107
SU70NW65
SU70NW66
SU70NW67
SU70NW68
BH106

Old Lodges
Rowlands Castle
Horse Pasture Farm
Woodberry Cottage
Durrants
Mays Coppice Farm
Lock's Coppice
Comley Cottage
Leigh Park
West Leigh
Southleigh Park House
Old Stable House

B2149
B2148
A3(M)
Links La
Bowes Hill
Castle Rd
Redhill Rd
Woodberry La
Prospect La
Middle Park Way
Wakefords Way
Petersfield Road
Park House Farm Way
Purbrook Way
Bedhampton
Emsworth Common Rd
Bartons Rd
Eastleigh Rd
Horndean Road

111500
111000
110500
110000
109500
109000
108500
108000
107500
470000
470500
471000
471500
472000
472500
473000
473500
474000

Project Boundary
Transect 1

BGS Locations
- BGS data point

GI Locations
- Phase 1

Features Interpreted from LiDAR
- Dry River Valley
- Gully

Superficial geology
- HEAD - CLAY, SILT, SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- Geoarchaeological Character Zones

0 500 m

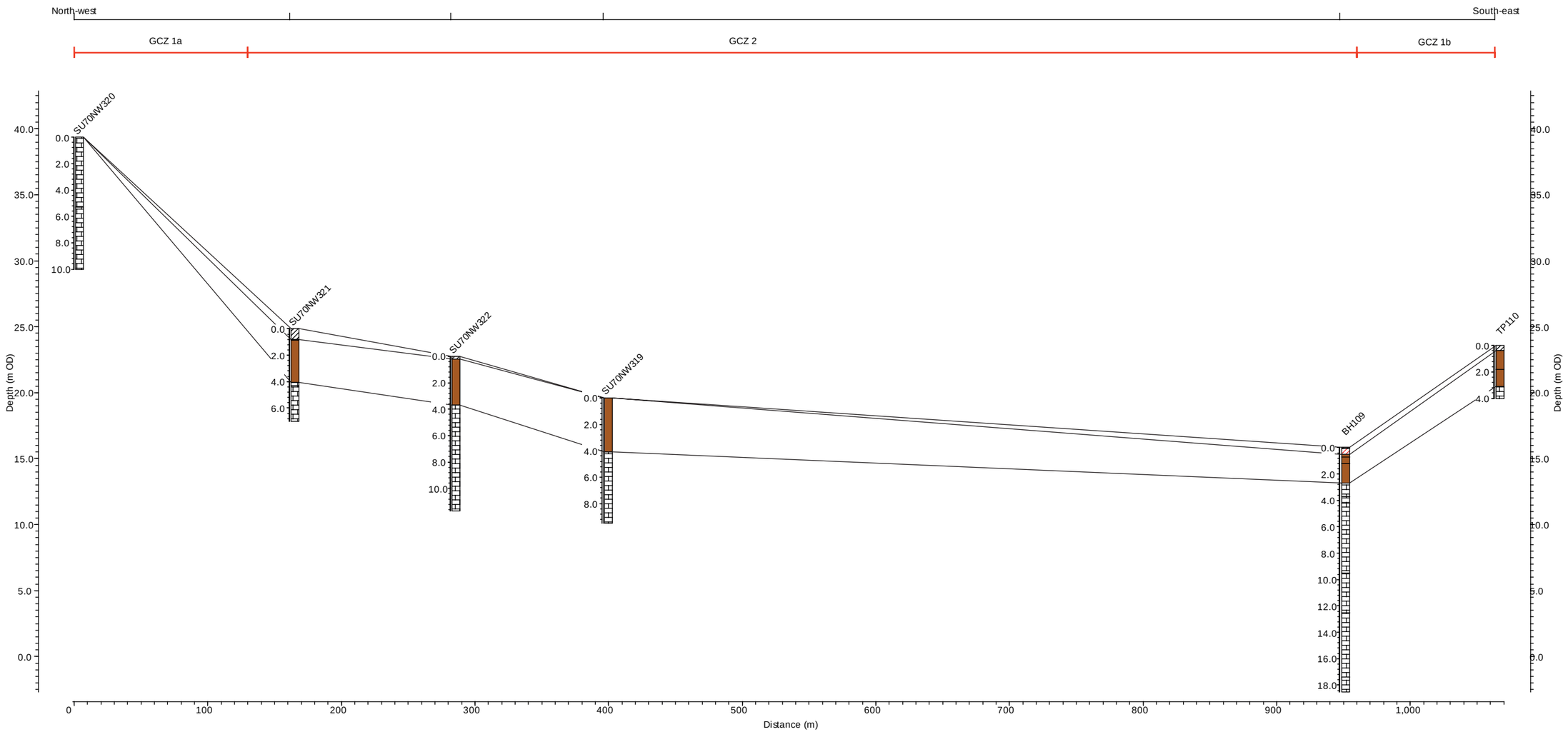
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Figure 6: GCZ 1-3

X:\Projects\271400\Graphics_Office\Rep figs\GI\2024_10_07



Stratigraphy	
Topsoil	Topsoil / Made Ground
Made Ground	
Head Deposits	Pleistocene / Holocene Slope Deposits
Bedrock	Bedrock

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Figure 7: Transect 1

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GCZ 1a
GCZ 1b
GCZ 2
GCZ 4a
GCZ 4b
GCZ 5a
GCZ 5b
GCZ 5c
GCZ 6
GCZ 7
GCZ 8
TP110
BH108
BH109
TP111
BH107
BH106
BH105
BH104
BH103
BH102
BH102A
BH101
BHP06
BHP05
TPP05-DS
BHP02
TPP02
2B1500SA
BHP01
TPP01
BH202
Stakes
Leigh Park
West Leigh
Bedhampton
Havant
Brockhampton
Langstone
Wade Court Farm
Farlington
Denvilles
Warblington
Middle Park Way
Purbrook Way
Bedhampton Way
Petersfield Road
Portsdown Hill Road
Crossland Dr.
Park Lane
Park House Farm Way
Wakefords Way
College Rd
Frendstaple Rd
Hollis Hill Rd
Elmleigh Rd
Southleigh Rd
Emsworth Rd
Langstone Road
Harts Farm Way
A3(M)
B2150
B2177
B2149
B2199
B2147
A2030
A27
A3023
J4
J5

Project Boundary
Geoarchaeological Character Zones
Transect 2
Transect 3
Transect 4
Transect 5
GI Locations
Phase 1
Phase 2
Phase 3A
Features Interpreted from LiDAR
Gully
Superficial geology
HEAD - CLAY, SILT, SAND AND GRAVEL
ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
RAISED MARINE DEPOSITS - SAND AND GRAVEL
RAISED MARINE DEPOSITS - SAND AND GRAVEL

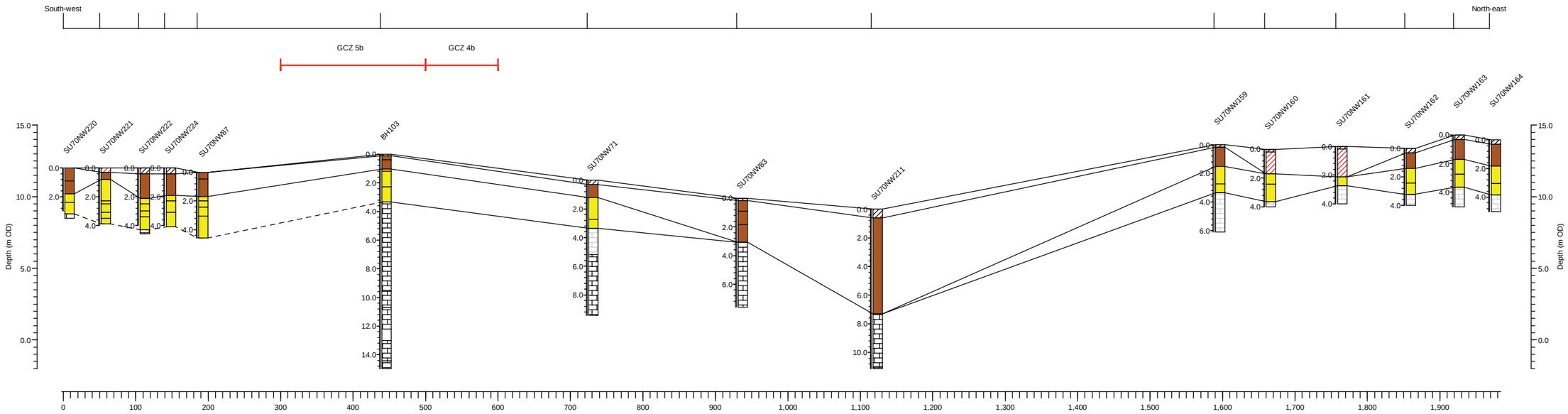
0 500 m

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Figure 8: GCZs 4-6

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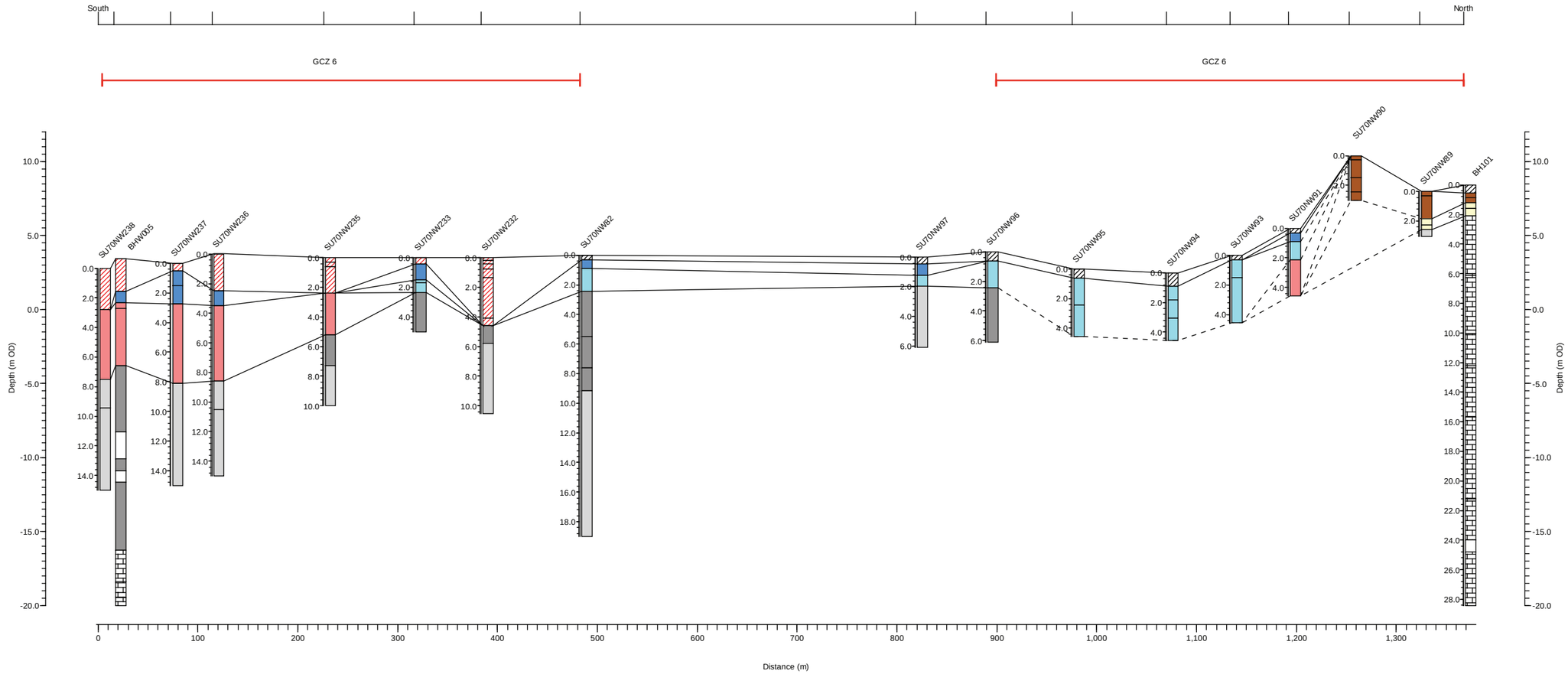
Stratigraphy	
Topsoil	Topsoil / Made Ground
Made Ground	
Head Deposits	Pleistocne Slope Deposits (<MIS 6)
Raised Beach Deposits	Brighton-Norton Raised Beach (MIS 7-6)
Possible Bedrock	Bedrock
Bedrock	

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Figure 9: Transect 2

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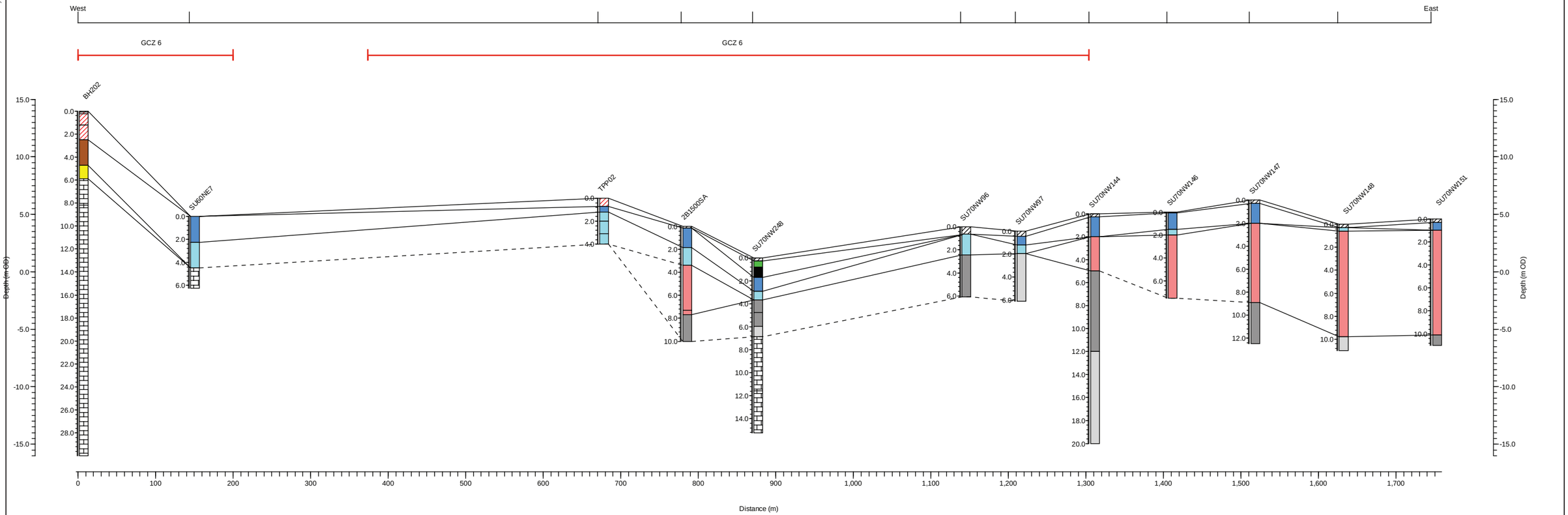
Stratigraphy	
Topsoil	Topsoil / Made Ground
Made Ground	
Clay	Holocene alluvial deposits
Gravelly Clay	?Pleistocene slope deposits (<MIS 5e)
Gravels	?Pagham Raised Beach (MIS 5e)
Chalky Silts and Gravels	?Pleistocene freshwater deposits
Possible Chalky Silts and Gravels	
Head Deposits	Pleistocene Slope Deposits (<MIS 6)
Possible Raised Beach Deposits	?Brighton-Norton Raised Beach (MIS 7-6)
Bedrock	Bedrock
AZCL/No Recovery	

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Figure 10: Transect 3

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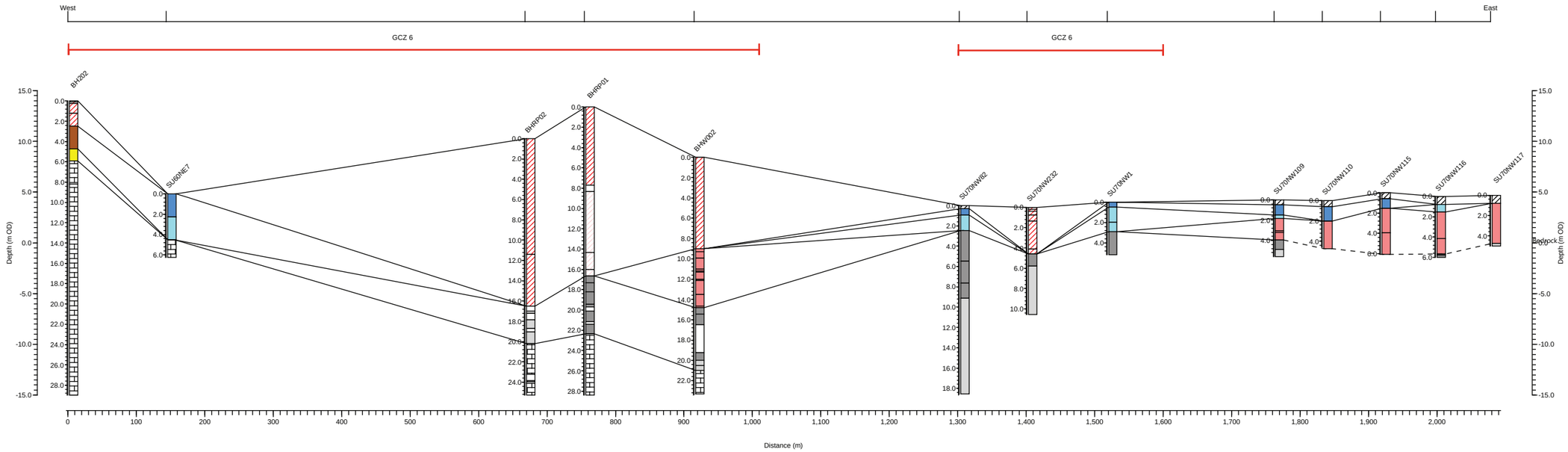
Stratigraphy	
Topsoil	Topsoil / Made Ground
Made Ground	
Alluvium	Holocene alluvium - Hermitage Stream
Peat	
Clay	Holocene alluvial deposits
Gravelly Clay	?Pleistocene slope deposits (<MIS 5e)
Gravels	?Pagham Raised Beach (MIS 5e)
Chalky Silts and Gravels	?Pleistocene freshwater deposits
Possible Chalky Silts and Gravels	
Head Deposits	Pleistocene Slope Deposits (<MIS 6)
Raised Beach Deposits	?Brighton-Norton Raised Beach (MIS 7-6)
Bedrock	Bedrock

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Figure 11: Transect 4

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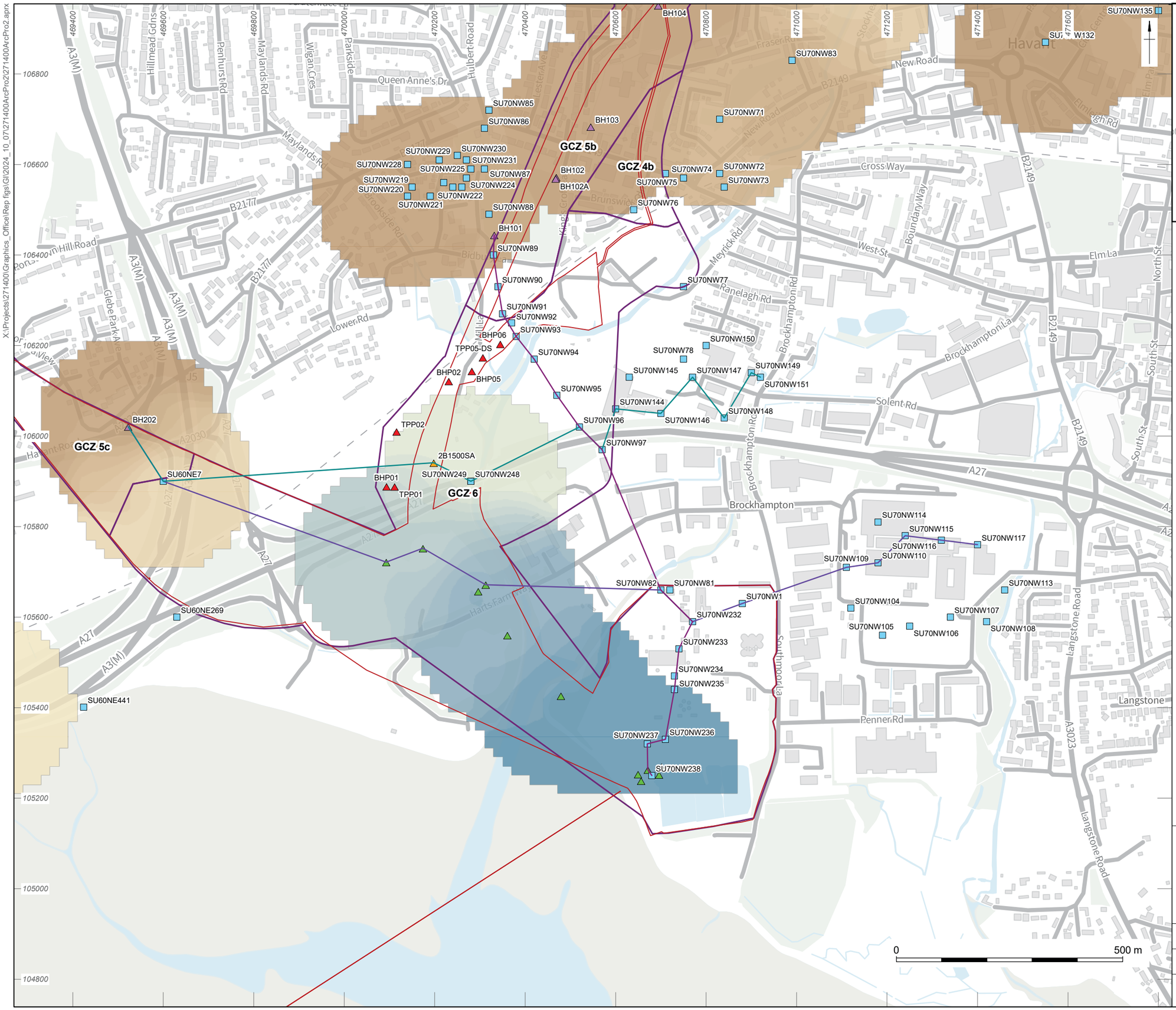
Stratigraphy	
Topsoil	Topsoil / Made Ground
Made Ground	
Possible Made Ground	
Clay	Holocene alluvial deposits
Gravelly Clay	?Pleistocene slope deposits (<MIS 5e)
Gravels	?Pagham Raised Beach (MIS 5e)
Chalky Silts and Gravels	?Pleistocene freshwater deposits
Possible Chalky Silts and Gravels	
Head Deposits	Pleistocene Slope Deposits (<MIS 6)
Raised Beach Deposits	Brighton-Norton Raised Beach (MIS 7-6)
Bedrock	Bedrock
AZCL/No Recovery	

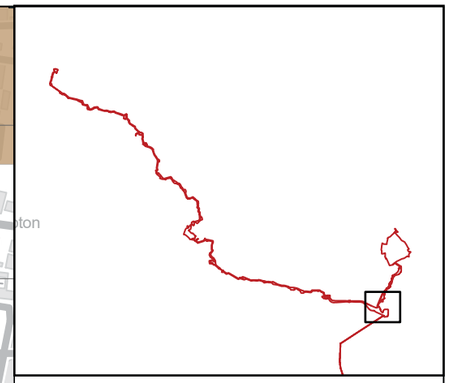
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Date: 08/10/2024	Created by: EG	Revision: 0	Scale: NA

Figure 12: Transect 5

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- Project Boundary
- Geoarchaeological Character Zones (Wessex Archaeology 2023a)
- Transect 3
- Transect 4
- Transect 5

BGS Locations

- BGS data point

GI Data

- Phase 0
- Phase 1
- Phase 2
- Phase 3A

Bedrock Surface Depth (Metres OD)

- 9.01 - 10.00
- 8.01 - 9.00
- 7.01 - 8.00
- 6.01 - 7.00
- 5.01 - 6.00
- 4.01 - 5.00
- 3.01 - 4.00
- 2.01 - 3.00
- 1.01 - 2.00
- 0.01 - 1.00
- -1.99 - -1.00
- -5.99 - -5.00
- -6.99 - -6.00
- -7.99 - -7.00
- -8.99 - -8.00
- -9.99 - -9.00
- -10.99 - -10.00
- -11.99 - -11.00
- -12.99 - -12.00
- -13.99 - -13.00
- -14.99 - -14.00
- -15.99 - -15.00
- -16.29 - -16.00

0 500 m

Coordinate system: OSGB 1936 British National Grid

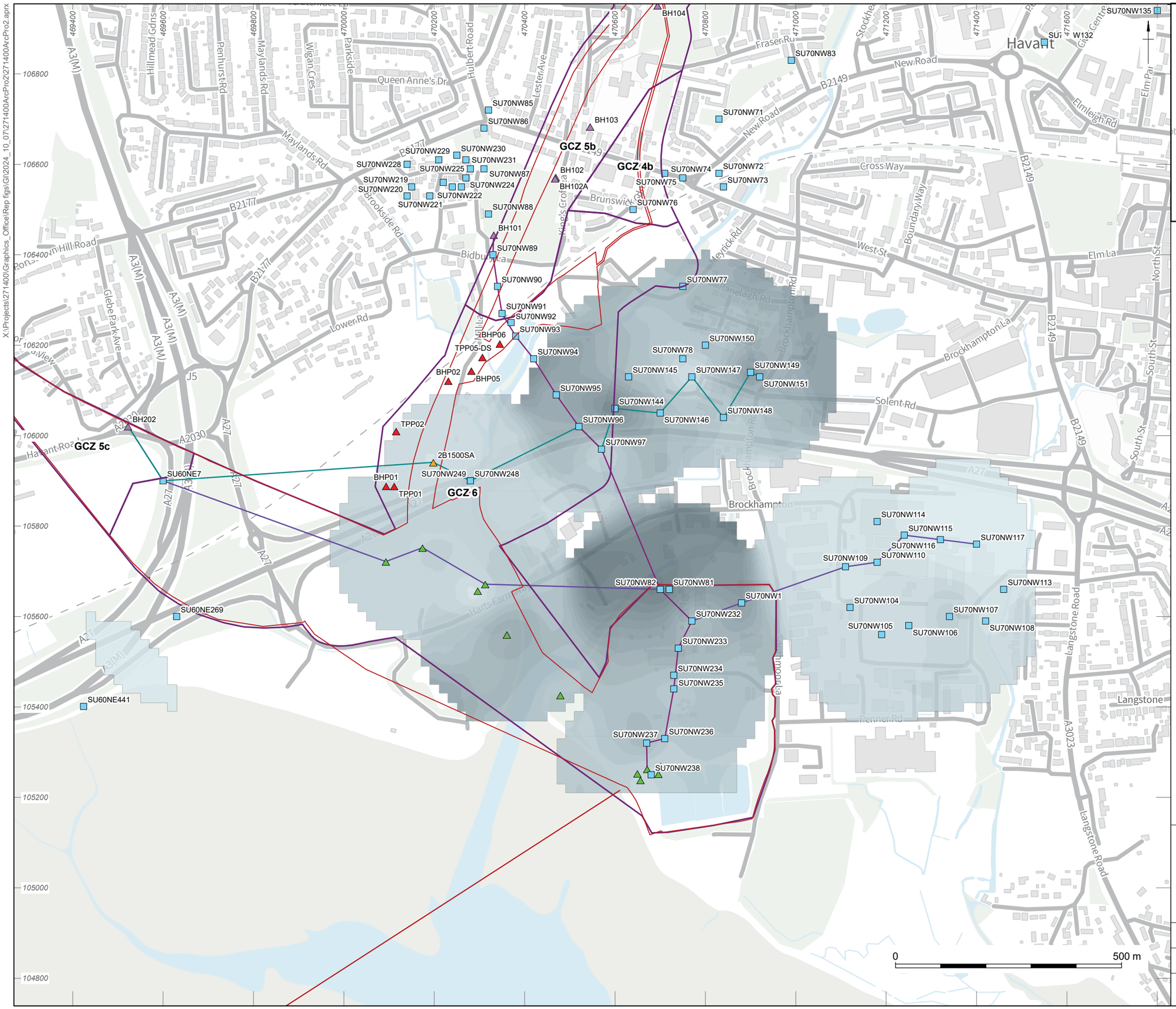
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Figure 13: GCZ 6 – bedrock surface elevation

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Project Boundary
Geoarchaeological Character Zones (Wessex Archaeology 2023a)
Transect 3
Transect 4
Transect 5

BGS Locations
- BGS data point

GI Data
- Phase 0
- Phase 1
- Phase 2
- Phase 3A

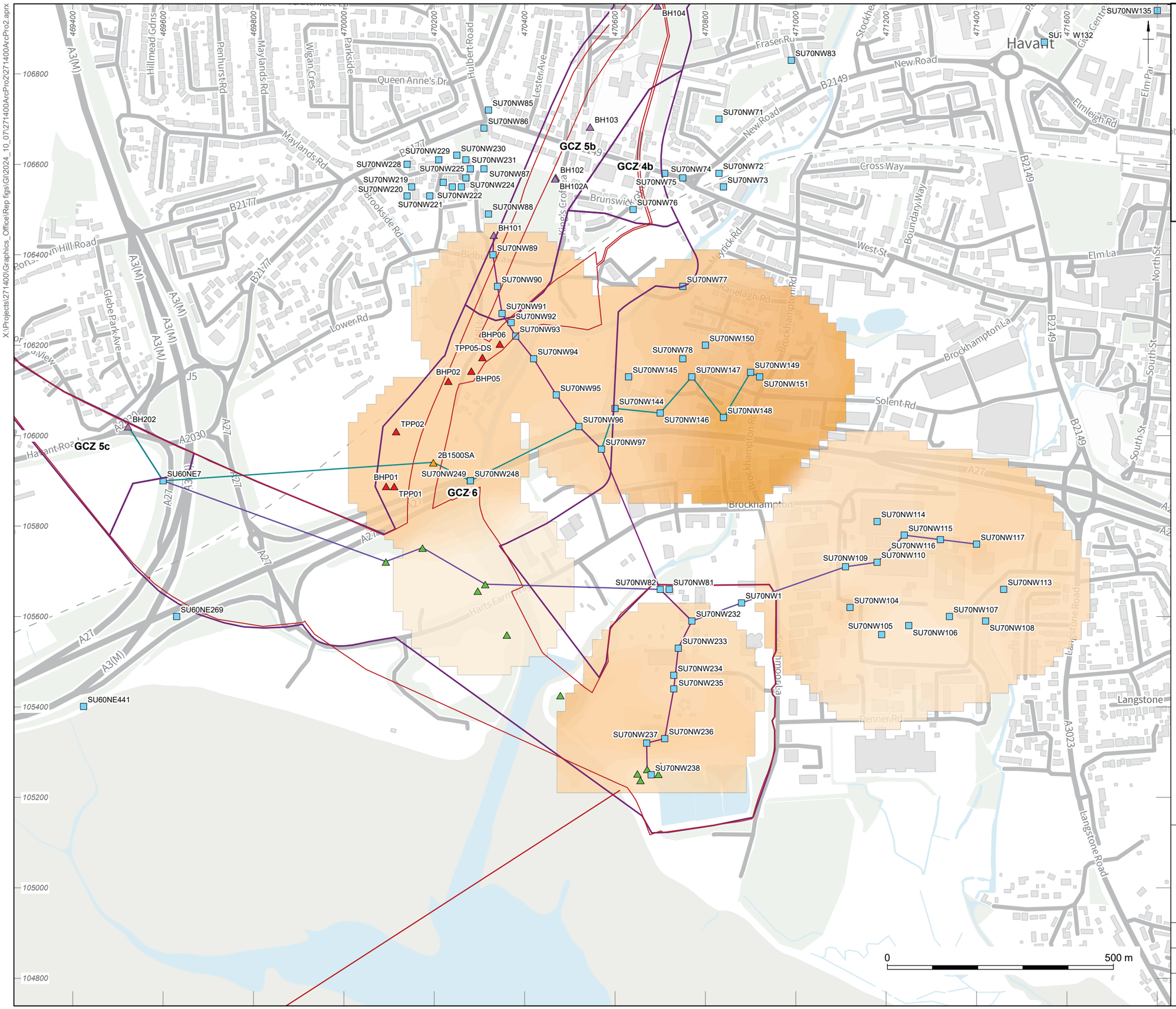
Chalky Silts and Gravels Thickness (m)
- 15.01 - 16.00
- 14.01 - 15.00
- 13.01 - 14.00
- 12.01 - 13.00
- 11.01 - 12.00
- 10.01 - 11.00
- 9.01 - 10.00
- 8.01 - 9.00
- 7.01 - 8.00
- 6.01 - 7.00
- 5.01 - 6.00
- 4.01 - 5.00
- 3.01 - 4.00
- 2.01 - 3.00
- 1.01 - 2.00
- 0.01 - 1.00

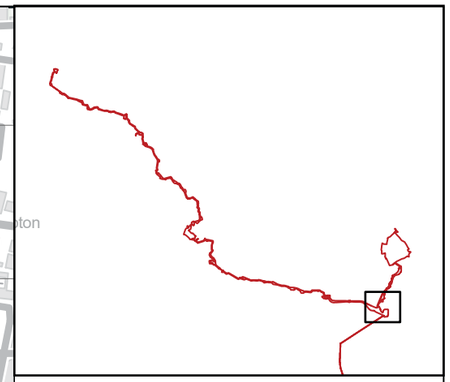
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Figure 14: GCZ 6 – thickness of Chalky Silts and Gravels

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Project Boundary
Geoarchaeological Character Zones (Wessex Archaeology 2023a)
Transect 3
Transect 4
Transect 5

BGS Locations
- BGS data point

GI Data
- Phase 0
- Phase 1
- Phase 2
- Phase 3A

Thickness of Gravels (m)
- 9.01 - 9.50
- 8.51 - 9.00
- 8.01 - 8.50
- 7.51 - 8.00
- 7.01 - 7.50
- 6.51 - 7.00
- 6.01 - 6.50
- 5.51 - 6.00
- 5.01 - 5.50
- 4.51 - 5.00
- 4.01 - 4.50
- 3.51 - 4.00
- 3.01 - 3.50
- 2.51 - 3.00
- 2.01 - 2.50
- 1.51 - 2.00
- 1.01 - 1.50
- 0.51 - 1.00
- 0.31 - 0.50

Coordinate system: OSGB 1936 British National Grid

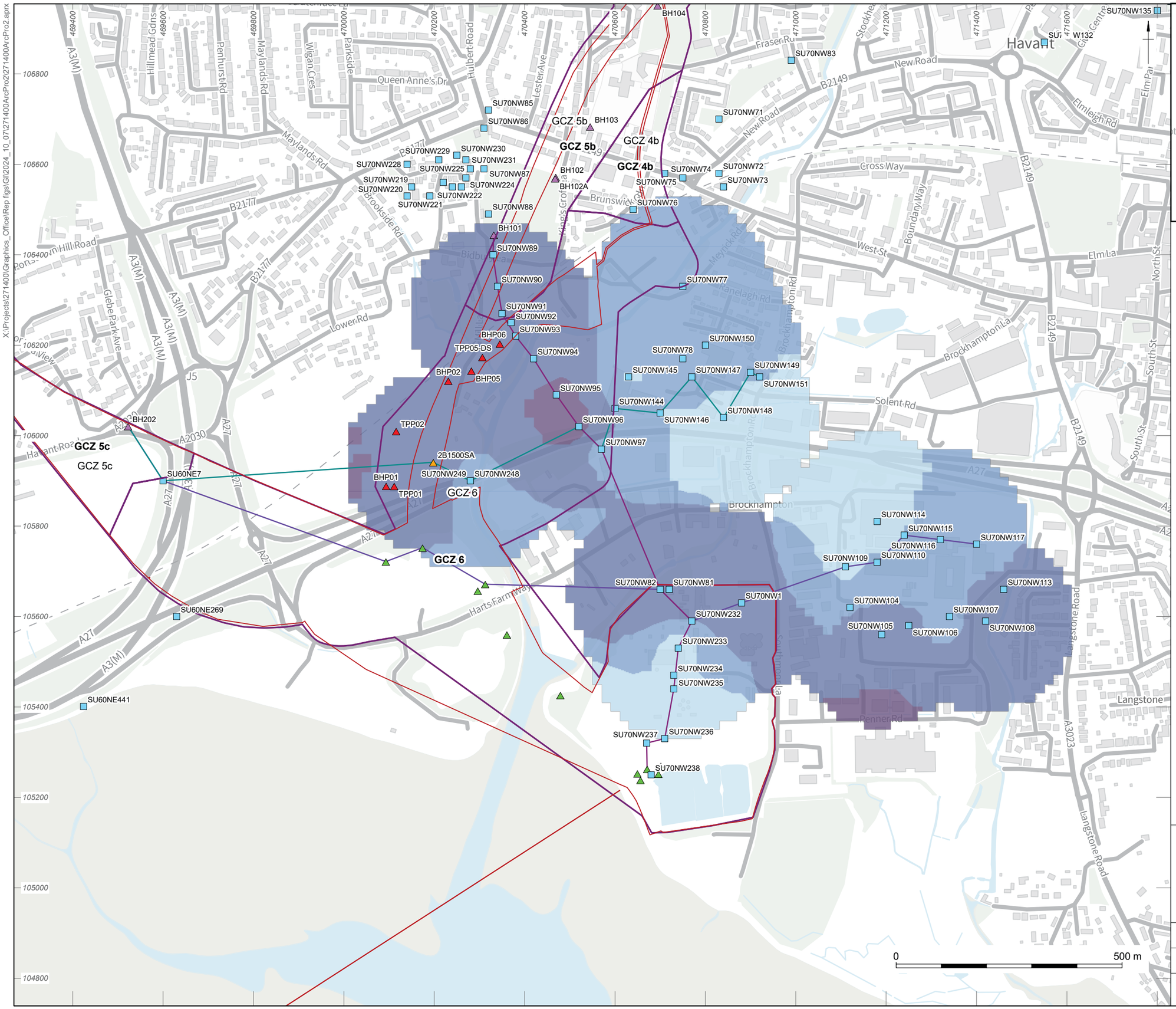
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Figure 15: GCZ 6 – thickness of Gravels

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Figure 16: GCZ 6 – thickness of Gravelly Clays

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GCZ 5b
GCZ 4b
GCZ 5c
GCZ 6

BH104
BH103
BH102
BH102A
BH101
BH202
BHP06
BHP02
BHP05
BHP01
TPP05-DS
TPP02
TPP01
2B1500SA
SU60NE7
SU60NE269
SU60NE441

SU70NW85
SU70NW86
SU70NW83
SU70NW71
SU70NW135
SU70NW132
SU70NW229
SU70NW230
SU70NW231
SU70NW228
SU70NW225
SU70NW87
SU70NW219
SU70NW224
SU70NW220
SU70NW222
SU70NW221
SU70NW88
SU70NW74
SU70NW72
SU70NW75
SU70NW73
SU70NW76
SU70NW89
SU70NW90
SU70NW77
SU70NW91
SU70NW92
SU70NW93
SU70NW94
SU70NW150
SU70NW78
SU70NW145
SU70NW147
SU70NW149
SU70NW151
SU70NW95
SU70NW144
SU70NW148
SU70NW146
SU70NW96
SU70NW97
SU70NW249
SU70NW248
SU70NW114
SU70NW115
SU70NW117
SU70NW116
SU70NW109
SU70NW110
SU70NW113
SU70NW82
SU70NW81
SU70NW1
SU70NW104
SU70NW107
SU70NW105
SU70NW106
SU70NW108
SU70NW232
SU70NW233
SU70NW234
SU70NW235
SU70NW237
SU70NW236
SU70NW238

Havant
Queen Anne's Dr
Maylands Rd
Penhurst Rd
Hillmead Gdns
Wigan Cres
Parkside
Hulbert Road
Lester Ave
Fraser Rd
New Road
B2149
Elmleigh Rd
Cross Way
Boundary Way
West St
Elm La
North St
South St
Brunswick Pl
Brookside Rd
Kings Croft La
Lower Rd
Glebe Park Ave
Brockhampton La
Solent Rd
Harts Farm Way
Penner Rd
Langstone
Langstone Road
A3023
A3(M)
A27
A2030
B2177
J5

106800
106600
106400
106200
106000
105800
105600
105400
105200
105000
104800

Project Boundary
Geoarchaeological Character Zones (Wessex Archaeology 2023a)
Transect 3
Transect 4
Transect 5
BGS Locations
BGS data point
GI Data
Phase 0
Phase 1
Phase 2
Phase 3A
Clays Thickness (m)
1.51 - 2.00
1.01 - 1.50
0.51 - 1.00
0.31 - 0.50

0
500 m

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Figure 17: GCZ 6 – thickness of Clays

X:\Projects\271400\Graphics_Office\Rep figs\GI\2024_10_07\271400ArcPro2\271400ArcPro2.aprx

GCZ 5b
GCZ 4b
GCZ 5c
GCZ 6
Havant
Brockhampton
Langstone
Penner Rd
Solent Rd
New Road
Fraser Rd
Elmleigh Rd
Cross Way
West St
Elm La
Ranelagh Rd
Brockhampton La
Lower Rd
Maylands Rd
Penhurst Rd
Hillmead Gdns
Wigan Cres
Parkside
Queen Anne's Dr
Lester Ave
Gilbert Road
Glebe Park
Kings Croft
Brunswick Sq
Boundary Way
Elm Pa
North St
South St
Langstone Road
Harts Farm Way
A3(M)
A27
A3023
B2149
B2177
BH104
BH103
BH102
BH102A
BH101
BH202
BHP01
BHP02
BHP05
BHP06
TPP01
TPP02
TPP05-DS
2B1500SA
SU70NW83
SU70NW85
SU70NW86
SU70NW71
SU70NW229
SU70NW230
SU70NW231
SU70NW228
SU70NW225
SU70NW87
SU70NW219
SU70NW220
SU70NW224
SU70NW222
SU70NW221
SU70NW88
SU70NW74
SU70NW72
SU70NW75
SU70NW73
SU70NW76
SU70NW89
SU70NW90
SU70NW77
SU70NW91
SU70NW92
SU70NW93
SU70NW94
SU70NW150
SU70NW78
SU70NW145
SU70NW147
SU70NW149
SU70NW151
SU70NW95
SU70NW144
SU70NW146
SU70NW148
SU70NW96
SU70NW97
SU70NW249
SU70NW248
SU60NE7
SU60NE269
SU60NE441
SU70NW82
SU70NW81
SU70NW1
SU70NW232
SU70NW233
SU70NW234
SU70NW235
SU70NW237
SU70NW236
SU70NW238
SU70NW114
SU70NW115
SU70NW116
SU70NW117
SU70NW109
SU70NW110
SU70NW104
SU70NW113
SU70NW107
SU70NW105
SU70NW106
SU70NW108
SU70NW135
W132
469400
469600
469800
470000
470200
470400
470600
470800
471000
471200
471400
471600
106800
106600
106400
106200
106000
105800
105600
105400
105200
105000
104800

Project Boundary
Geoarchaeological Character Zones (Wessex Archaeology 2023a)
Transect 3
Transect 4
Transect 5
BGS data point

GI Data
Phase 0
Phase 1
Phase 2
Phase 3A

Made Ground Thickness (m)
11.01 - 11.50
10.51 - 11.00
10.01 - 10.50
9.51 - 10.00
9.01 - 9.50
8.51 - 9.00
8.01 - 8.50
7.51 - 8.00
7.01 - 7.50
6.51 - 7.00
6.01 - 6.50
5.51 - 6.00
5.01 - 5.50
4.51 - 5.00
4.01 - 4.50
3.51 - 4.00
3.01 - 3.50
2.51 - 3.00
2.01 - 2.50
1.51 - 2.00
1.01 - 1.50
0.51 - 1.00
0.11 - 0.50

0
500 m

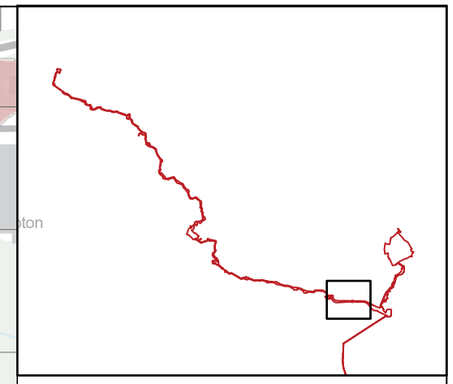
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Figure 18: GCZ 6 – Thickness of Made Ground

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Project Boundary

Geoarchaeological Character Zones (Wessex Archaeology 2023a)

BGS Locations

- BGS data point

GI Locations

- Phase 0
- Phase 1
- Phase 2
- Phase 3B
- Phase 3C

Superficial geology

- HEAD - CLAY, SILT, SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- RAISED MARINE DEPOSITS - SAND AND GRAVEL

0 500 m

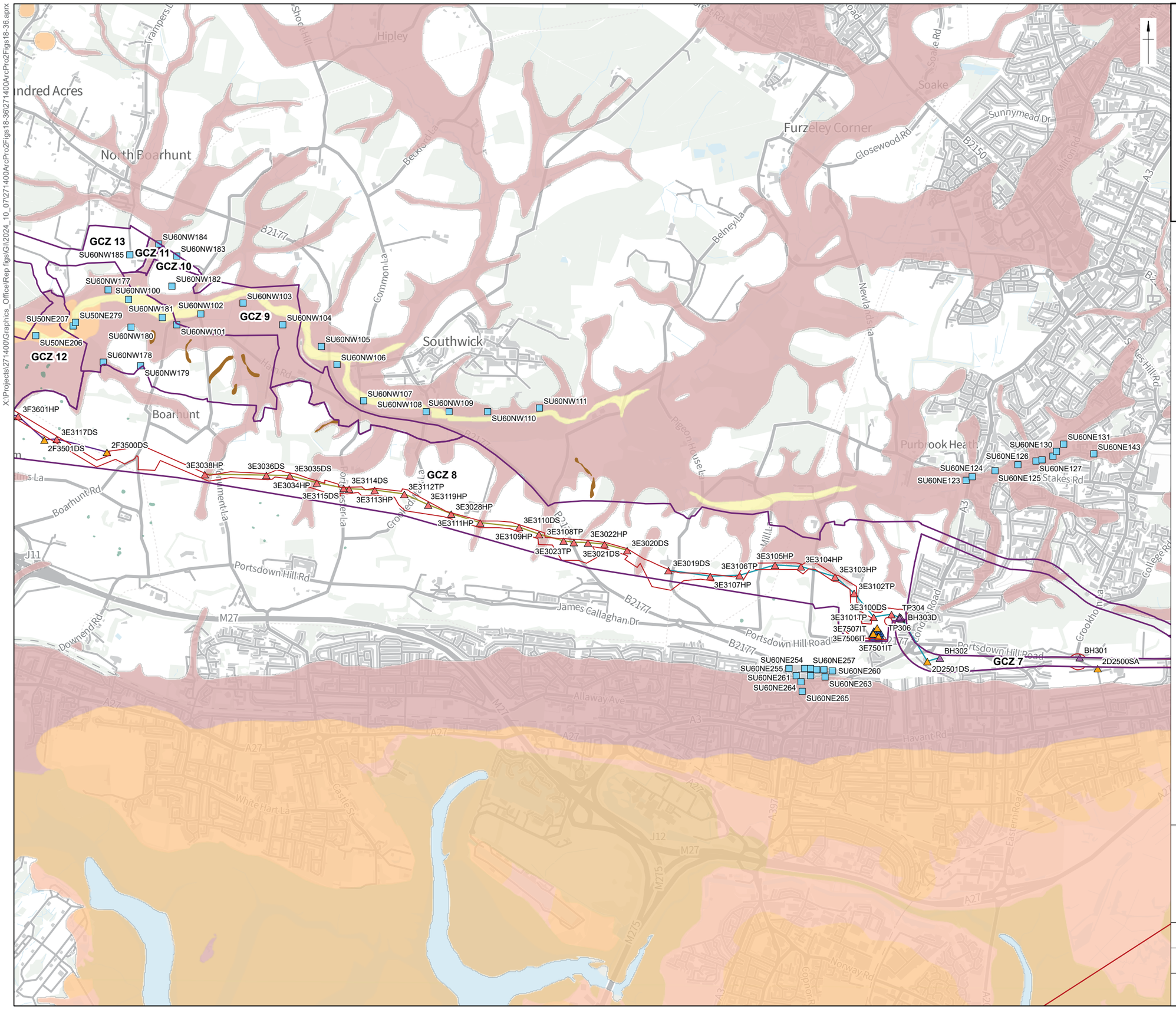
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Figure 19: GCZ 7

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Project Boundary
Transect 6
Transect 7
Transect 8
Transect 9

BGS Locations
- BGS data point

GI Locations
- Phase 0
- Phase 1
- Phase 2
- Phase 3A
- Phase 3B
- Phase 3C

Features Interpreted from LiDAR
- Dry River Valley
- Hollow

Superficial geology
- HEAD - CLAY, SILT, SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- Geoarchaeological Character Zones

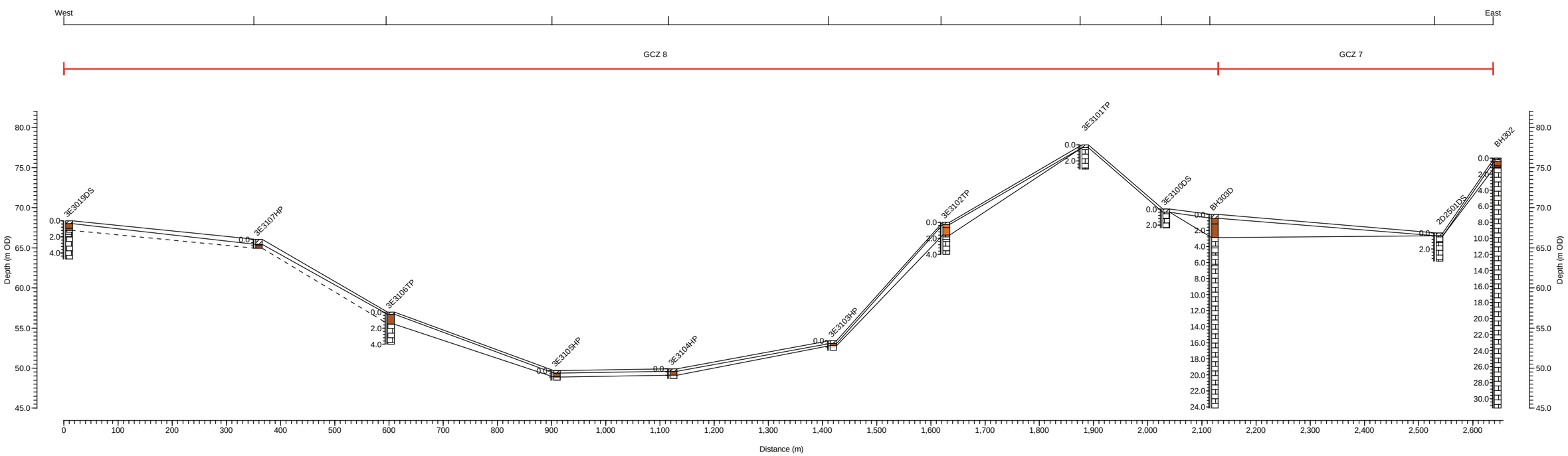
0 1,000 m

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Figure 20: GCZs 8-14

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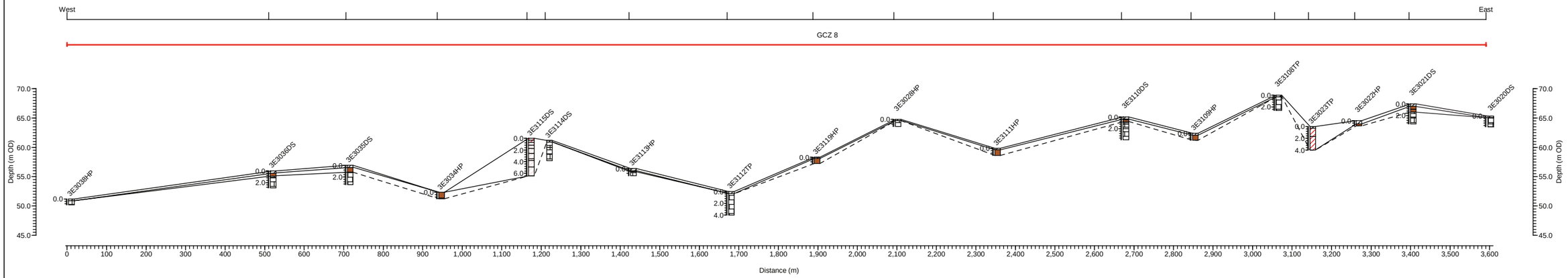
Stratigraphy	
Topsoil	Topsoil
Head Deposits	Pleistocene / Holocene Slope Deposits
Possible Head Deposits	
Bedrock	Bedrock

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Figure 21: Transect 6

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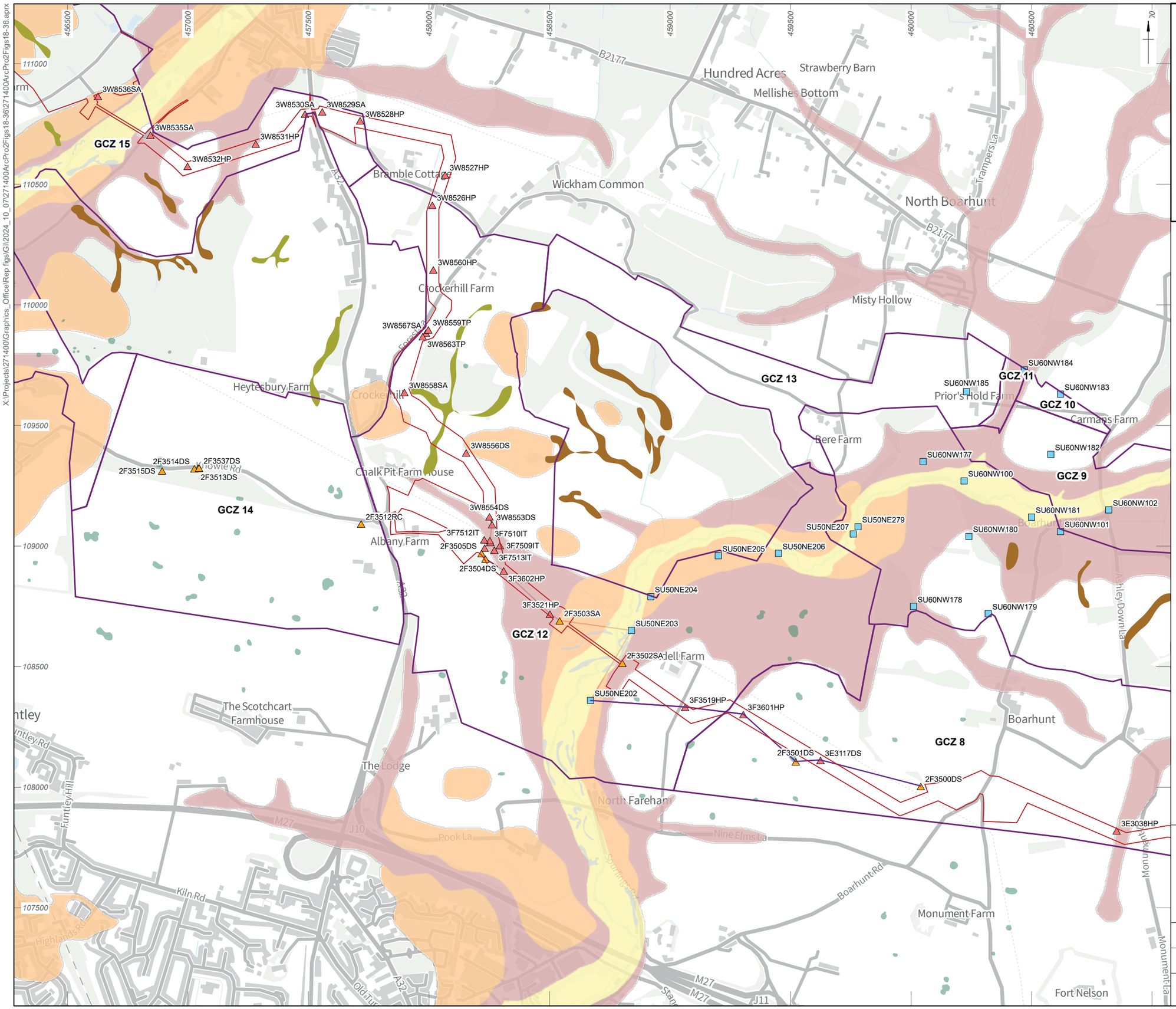
Stratigraphy	
Topsoil	Topsoil / Made Ground
Made Ground	
Possible Made Ground	
Head Deposits	Pleistocene / Holocene Slope Deposits
Bedrock	Bedrock

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Figure 22: Transect 7

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Figure 23: GCZs 8-14

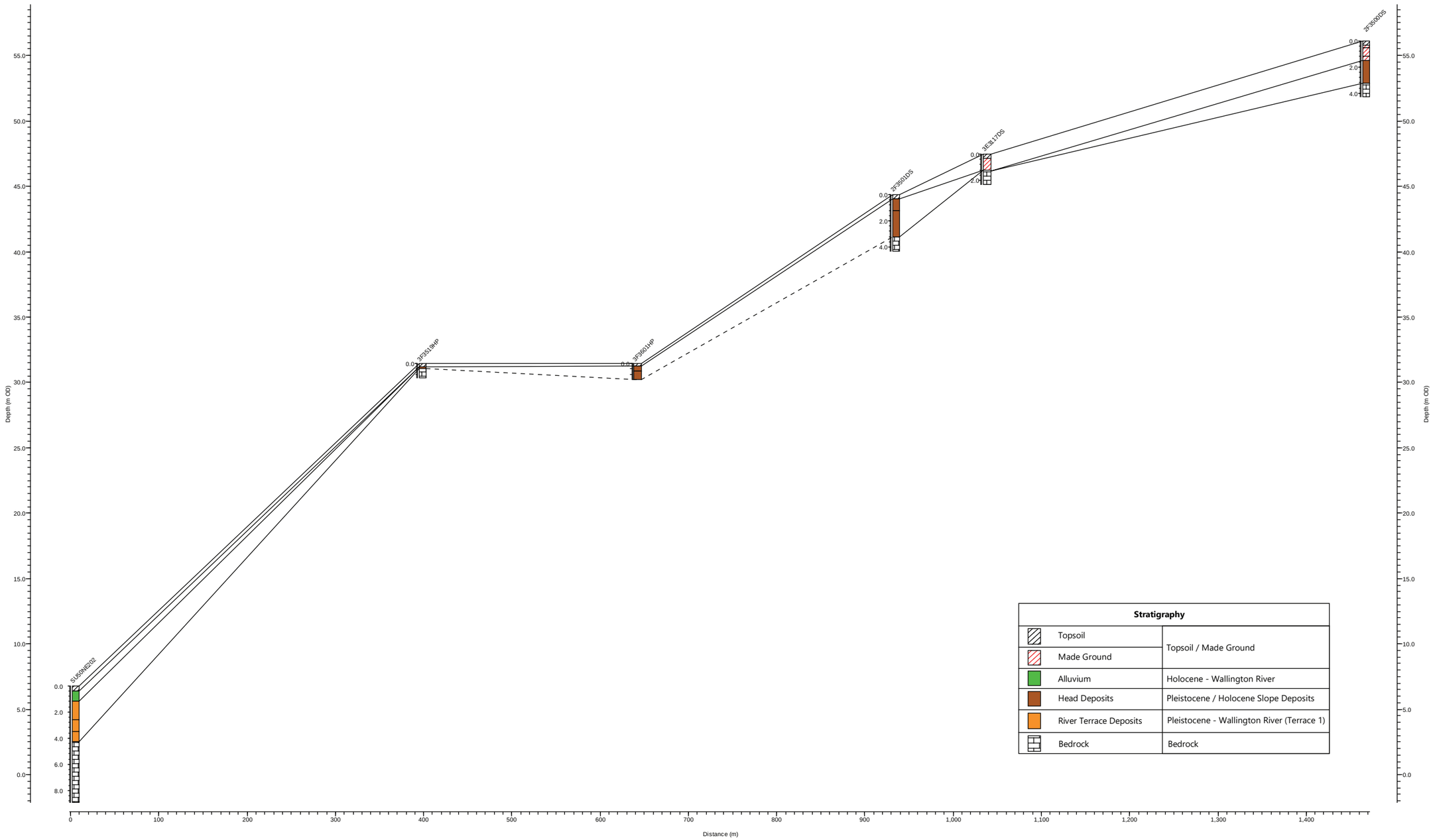
X:\Projects\271400\Graphics_Office\Rep figs\GI\2024_10_07

West

East

GCZ 12

GCZ 8



Stratigraphy	
Topsoil	Topsoil / Made Ground
Made Ground	
Alluvium	Holocene - Wallington River
Head Deposits	Pleistocene / Holocene Slope Deposits
River Terrace Deposits	Pleistocene - Wallington River (Terrace 1)
Bedrock	Bedrock

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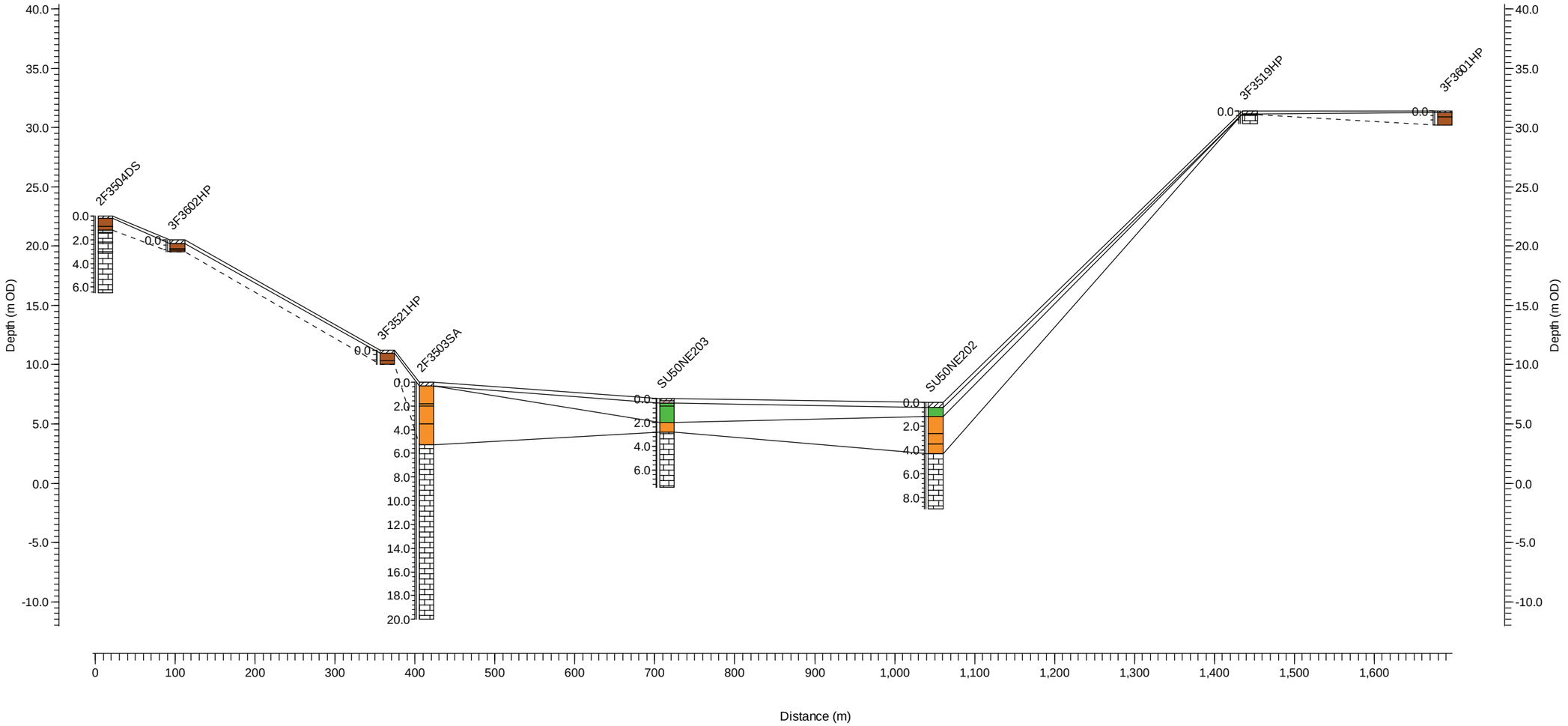
Figure 24: Transect 8

X:\Projects\271400\Graphics_Office\Rep figs\GI\2024_10_07

West

East

GCZ 12



Stratigraphy	
Topsoil	Topsoil
Alluvium	Holocene - Wallington River
Head Deposits	Pleistocene / Holocene Slope Deposits
River Terrace Deposits	Pleistocene - Wallington River (Terrace 1)
Bedrock	Bedrock
AZCL/No Recovery	

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Figure 25: Transect 9

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South

North

GCZ 12

2F3504DS

2F3505DS

3F3524DR

3F3523DR

3F7510IT

3W8553DS

3W8554DS

Depth (m OD)

Distance (m)

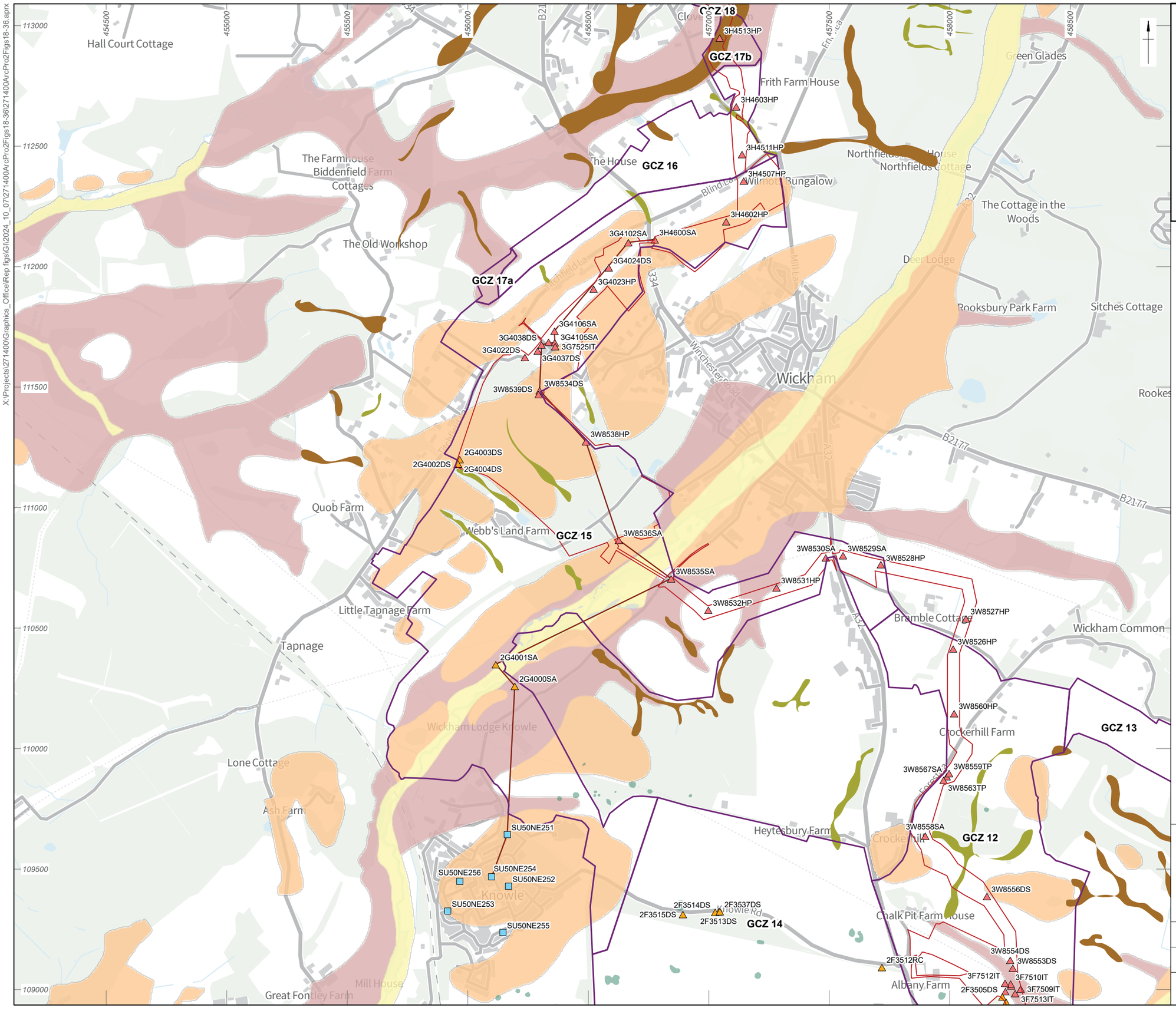
Stratigraphy	
Topsoil	Topsoil
Head Deposits	Pleistocene / Holocene Slope Deposits
Possible Fluvial Sanads and Gravel	?Pleistocene Channel
Bedrock	Bedrock
AZCL/No Recovery	

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Figure 26: Transect 10

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Project Boundary
Geoarchaeological Character Zones
Transect 11

BGS Locations
- BGS data point

GI Locations
- Phase 2
- Phase 3C

Features Interpreted from LiDAR
- Dry River Valley
- Palaeochannel
- Gully
- Hollow

Superficial geology
- HEAD - CLAY, SILT, SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- RAISED MARINE DEPOSITS - SAND AND GRAVEL

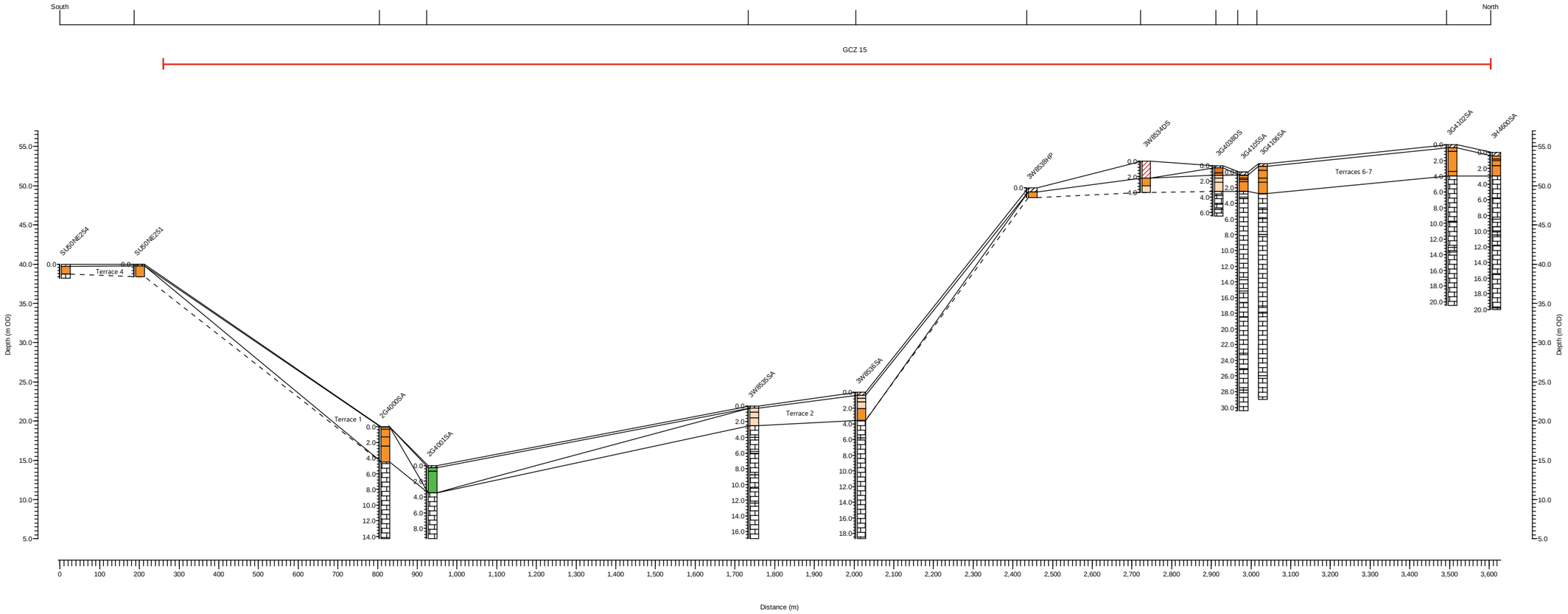
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Figure 27: GCZ 15

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Stratigraphy	
Topsoil	Topsoil / Made Ground
Made Ground	
Alluvium	Holocene - Wallington River
Possible Head Deposits	Pleistocene / Holocene Slope Deposits
River Terrace Deposits	Pleistocene - River Meon Terraces
Possible River Terrace Deposits	
Bedrock	Bedrock

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Figure 28: Transect 11

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GCZ 21
GCZ 20
GCZ 19
GCZ 18
GCZ 17b
GCZ 16
GCZ 17a
GCZ 15

3J5025HP
3J5024HP
3J5023HP
3J5029DS
3J5028DS
3J5027DS
3J5017HP
3J5016TP
3J5014TP
3J5015SA
3J5013HP
3J5102HP
3J5101HP
3J5012HP
3J5007DS
3J5004DS
3J5003HP
3J5002SA
2H4503DS
2H4502DS
3H4517SA
3H4606HP
2H4500DR
2H4501DR
3H4515HP
3H4514HP
3H4513HP
3H4603HP
3H4511HP
3H4507HP
3H4602HP
3G4102SA
3H4600SA
3G4024DS
3G4023HP
3G4106SA
3G4038DS
3G4105SA
3G4022DS
3G7525IT
3G4037DS
3W8539DS
3W8534DS

Glebe
Twelve Oaks Farm
Misling ford Rd
Heathfield House
Forest Rd
Forest Lodge
Longridge Farm
Bishop's Wood Rd
Waltham Chase
Bull La
Dester Road
Curridge La
Woodmans Farm
Nation's Farm
Oak Avenue
Gravel Hill
B2177
Spencer Place Farm
Middle Barn
Sandy La
Bishop's Hill House
Solomons La
Hawksnest Farm
Hawk's Nest Cottage
Lyons Copse
Marriot Meon Valley
Hotel and Country Club
Shirrell Heath
High St
Hospital Rd
Twynhams Hill
Newmans Hill
Kingsmead
Row Ash House
Row Ash
Raglington Farm
Southside Farm
St John's Church
(remains of)
Shedfield
St Annes La
Church Rd
A334
South Lodge
Faerland
Frith La
Frith Farm House
Green Glades
Hall Court Cottage
The Farmhouse
Biddenfield Farm
Cottages
The House
Northfields House
Northfields Cottage
Wilmot Bungalow
Blindlea
The Cottage in the
Woods
The Old Workshop
Mitchfield La
Deer Lodge
Rooksbury Park Farm
Sitches Cott
Winchester Road
Wickham
A32

Project Boundary
Geoarchaeological Character Zones
Transect 12
GI Locations
Phase 2
Phase 3B
Phase 3C
Features Interpreted from LiDAR
Dry River Valley
Gully
Superficial geology
HEAD - CLAY, SILT, SAND AND GRAVEL
ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
RAISED MARINE DEPOSITS - SAND AND GRAVEL
RAISED MARINE DEPOSITS - SAND AND GRAVEL

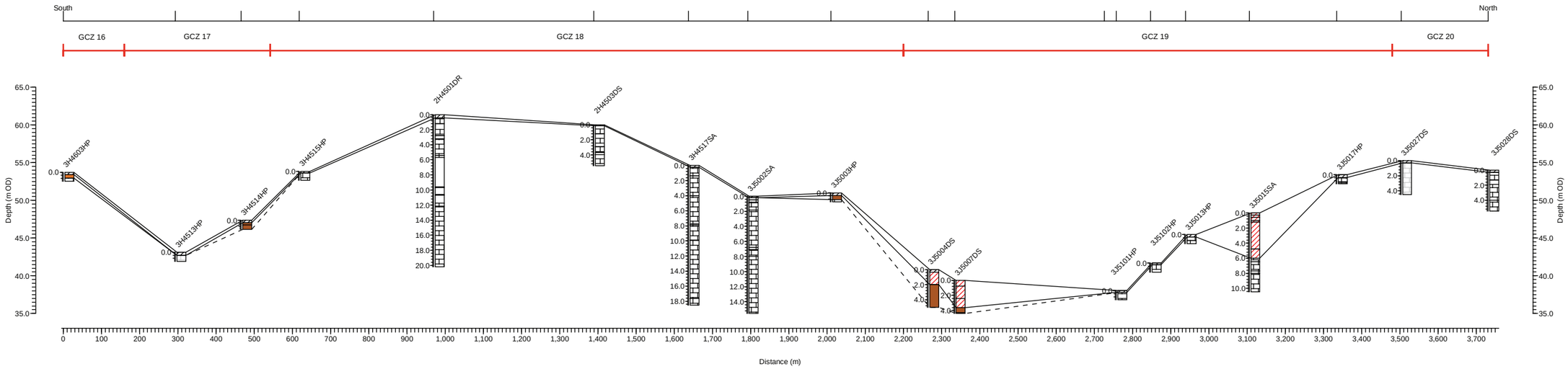
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Figure 29: GCZs 16–20

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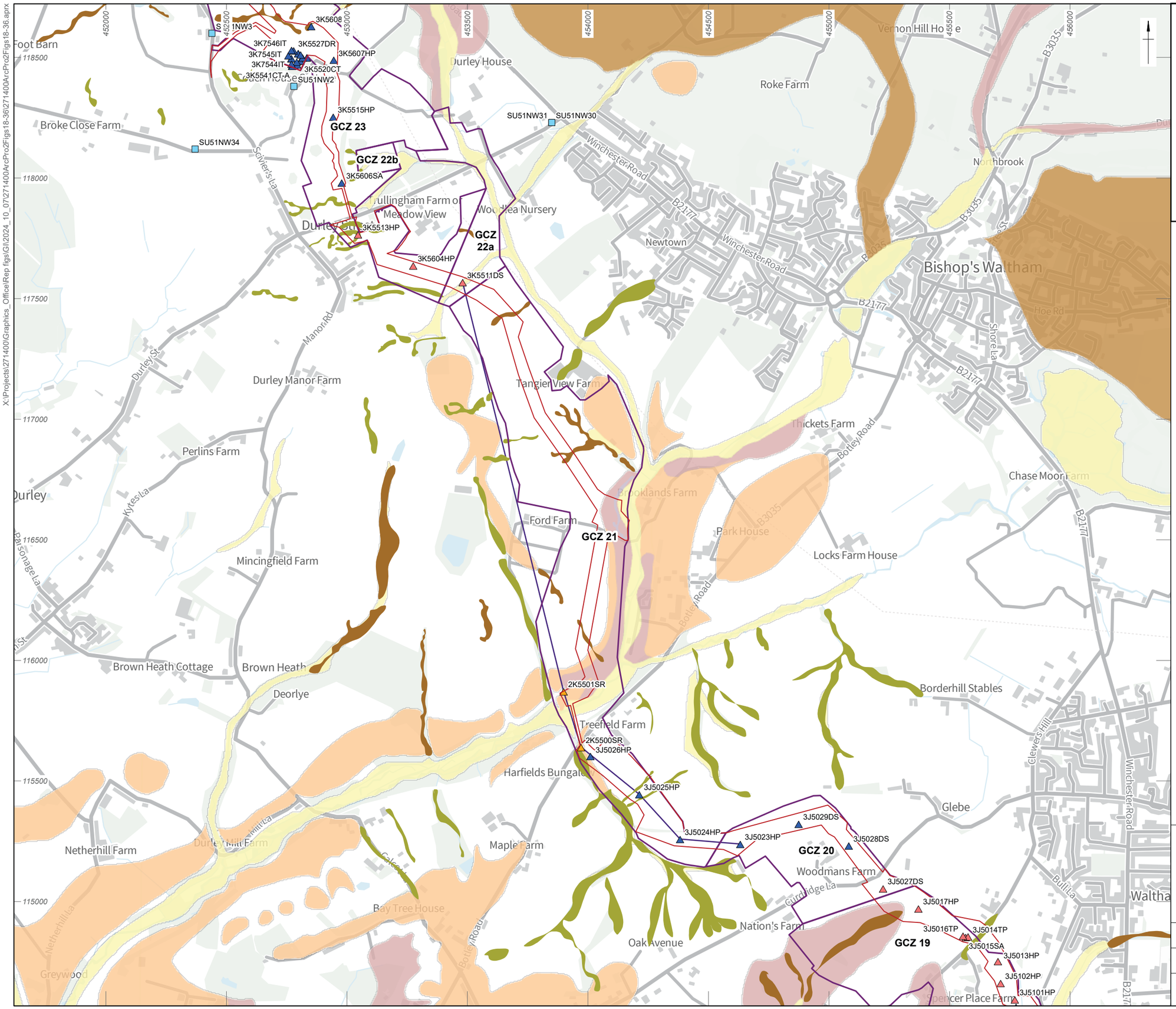
Stratigraphy	
Topsoil	Topsoil / Made Ground
Made Ground	
Head Deposits	Pleistocene / Holocene Slope Deposits
Possible Head Deposits	
Bedrock	Bedrock
Possible Bedrock	
AZCL/No Recovery	

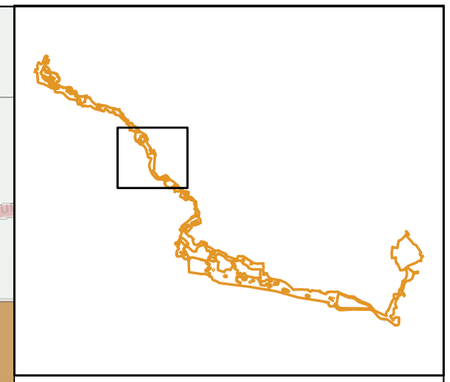
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Figure 30: Transect 12

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Project Boundary
Geoarchaeological Character Zones (Wessex Archaeology 2023a)
Transect 13

BGS Locations
- BGS data point

GI Locations
- Phase 2
- Phase 3B
- Phase 3C

Features Interpreted from LiDAR
- Dry River Valley
- Gully
- Palaeochannel

Superficial geology
- HEAD - CLAY, SILT, SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- RAISED MARINE DEPOSITS - SAND AND GRAVEL

0 500 m

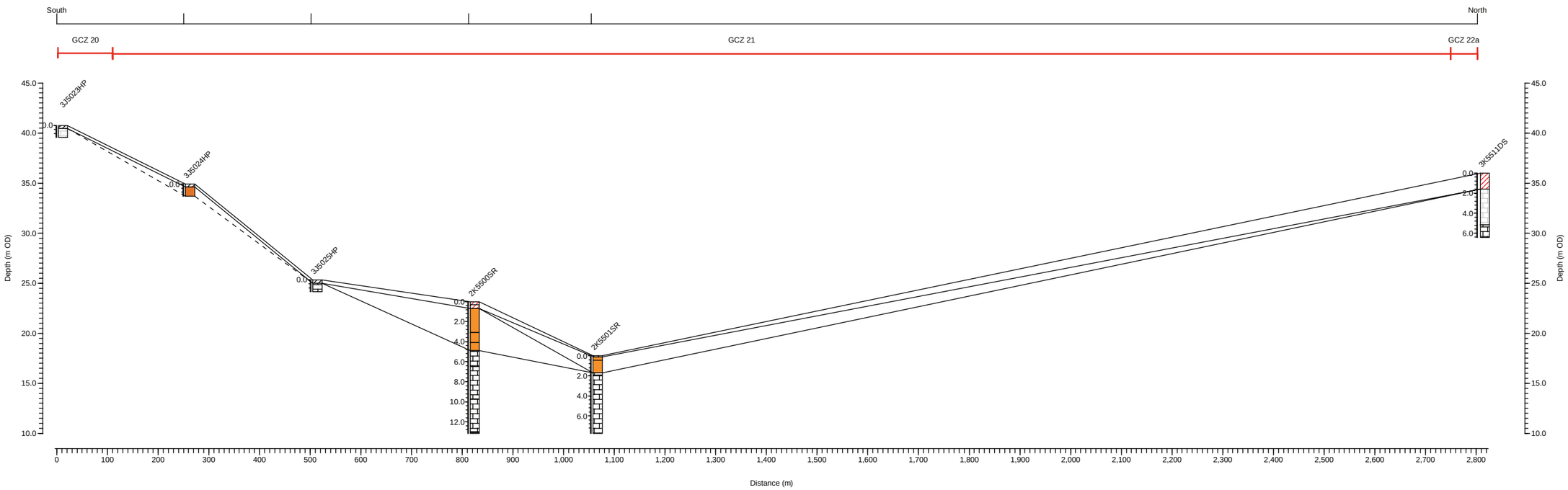
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Figure 31: GCZs 21–22

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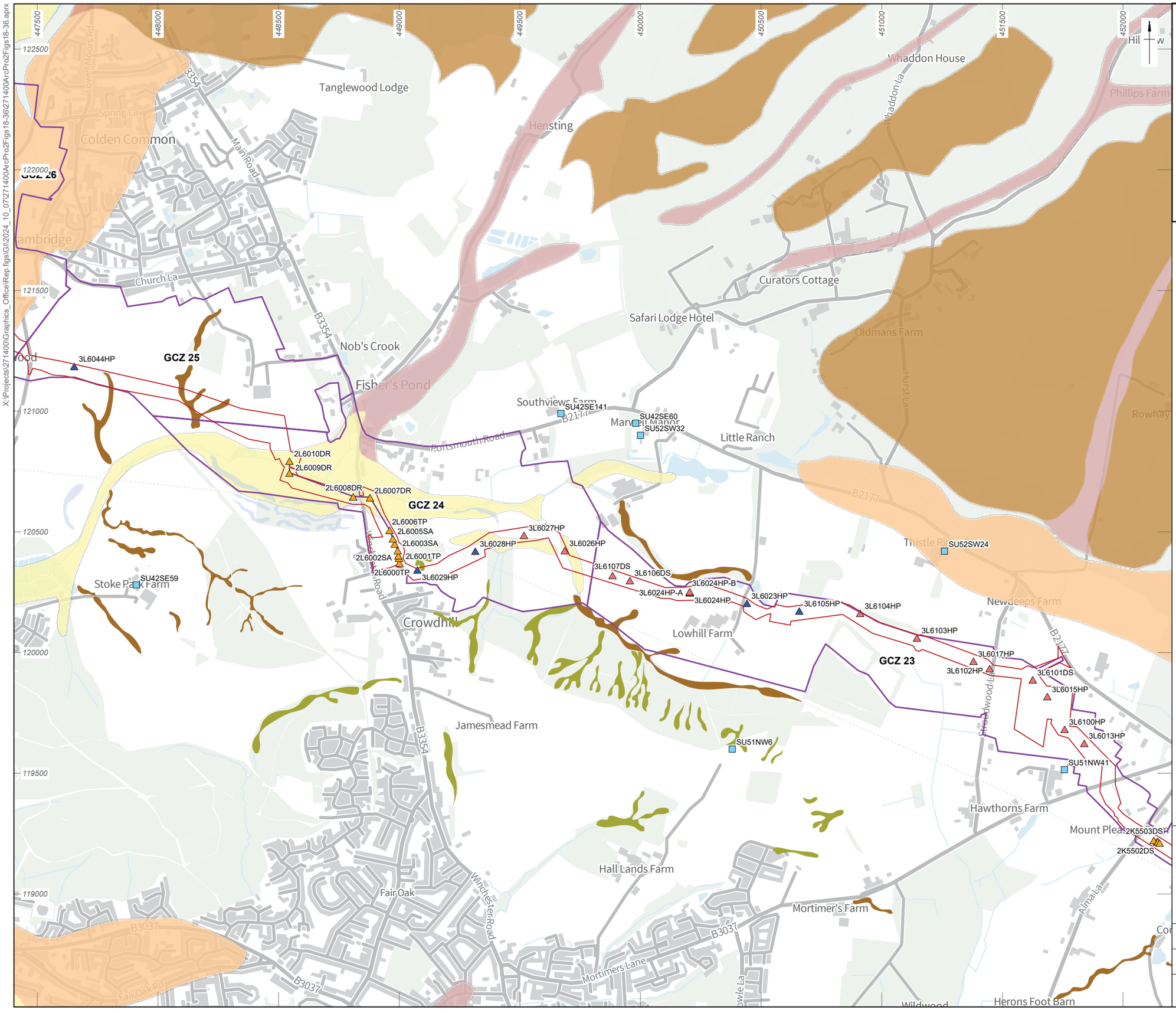
Stratigraphy	
Topsoil	Topsoil / Made Ground
Made Ground	
Possible Head Deposits	Pleistocene / Holocene Slope Deposits
River Terrace Deposits	Pleistocene - River Hamble Terraces
Bedrock	Bedrock
Possible Bedrock	

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Figure 32: Transect 13

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Project Boundary
Geoarchaeological Character Zones
Transect 14

BGS Locations
- BGS data point

GI Locations
- Phase 2
- Phase 3B
- Phase 3C

- Dry River Valley
- Gully
- Palaeochannel
- Roddon

Superficial geology
- HEAD - CLAY, SILT, SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- RAISED MARINE DEPOSITS - SAND AND GRAVEL

0 500 m

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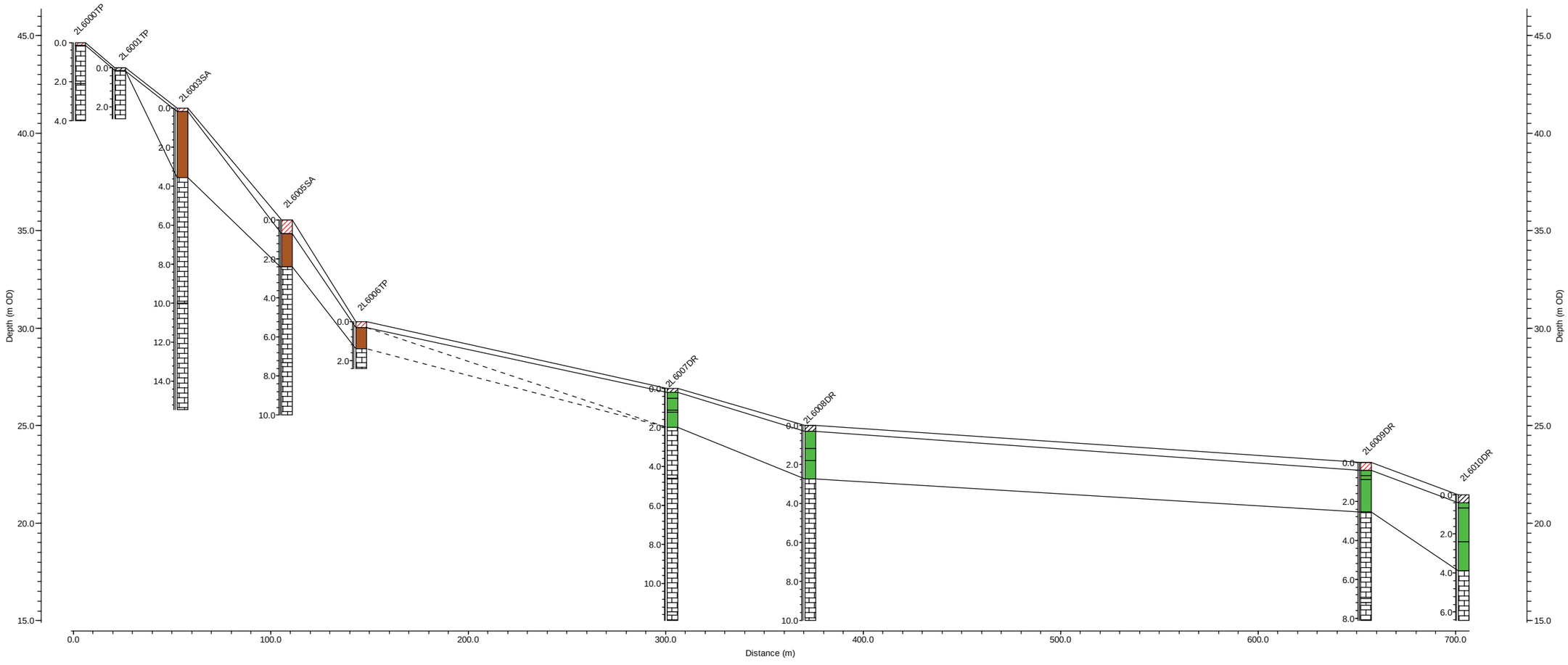
Figure 33: GCZs 23–25

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South-west

North-east

GCZ 24



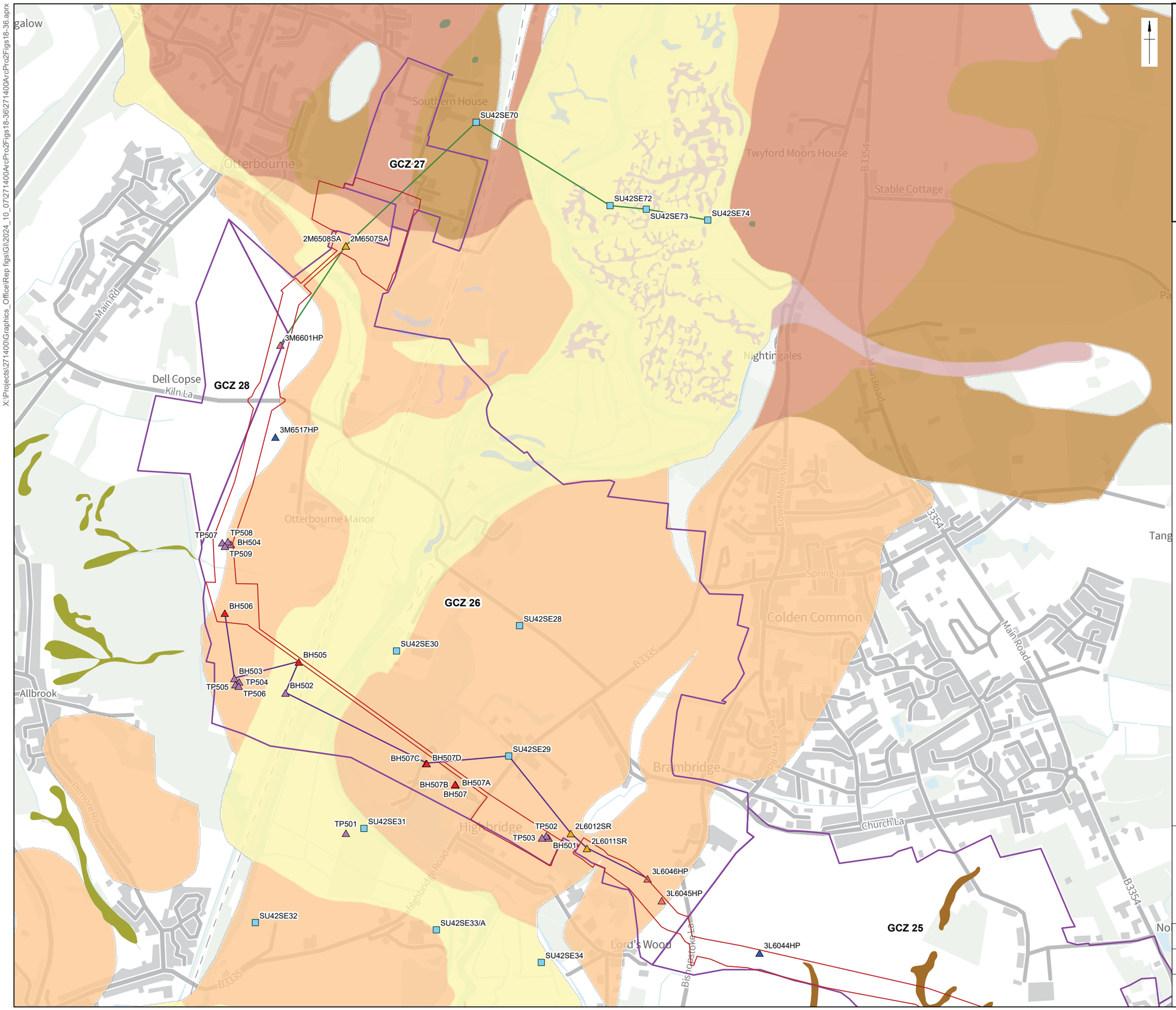
Stratigraphy
Topsoil
Made Ground
Holocene Alluvium
Pleistocene / Holocene Slope Deposits
Bedrock

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Figure 34: Transect 14

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Project Boundary
Geoarchaeological Character Zones
Transect 16
Transect 15

BGS Locations
BGS data point

GI Locations
Phase 1
Phase 2
Phase 3A
Phase 3B
Phase 3C

Features Interpreted from LiDAR
Dry River Valley
Gully
Hollow
Palaeochannel
Roddon

Superficial geology
HEAD - CLAY, SILT, SAND AND GRAVEL
ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
RAISED MARINE DEPOSITS - SAND AND GRAVEL
RAISED MARINE DEPOSITS - SAND AND GRAVEL

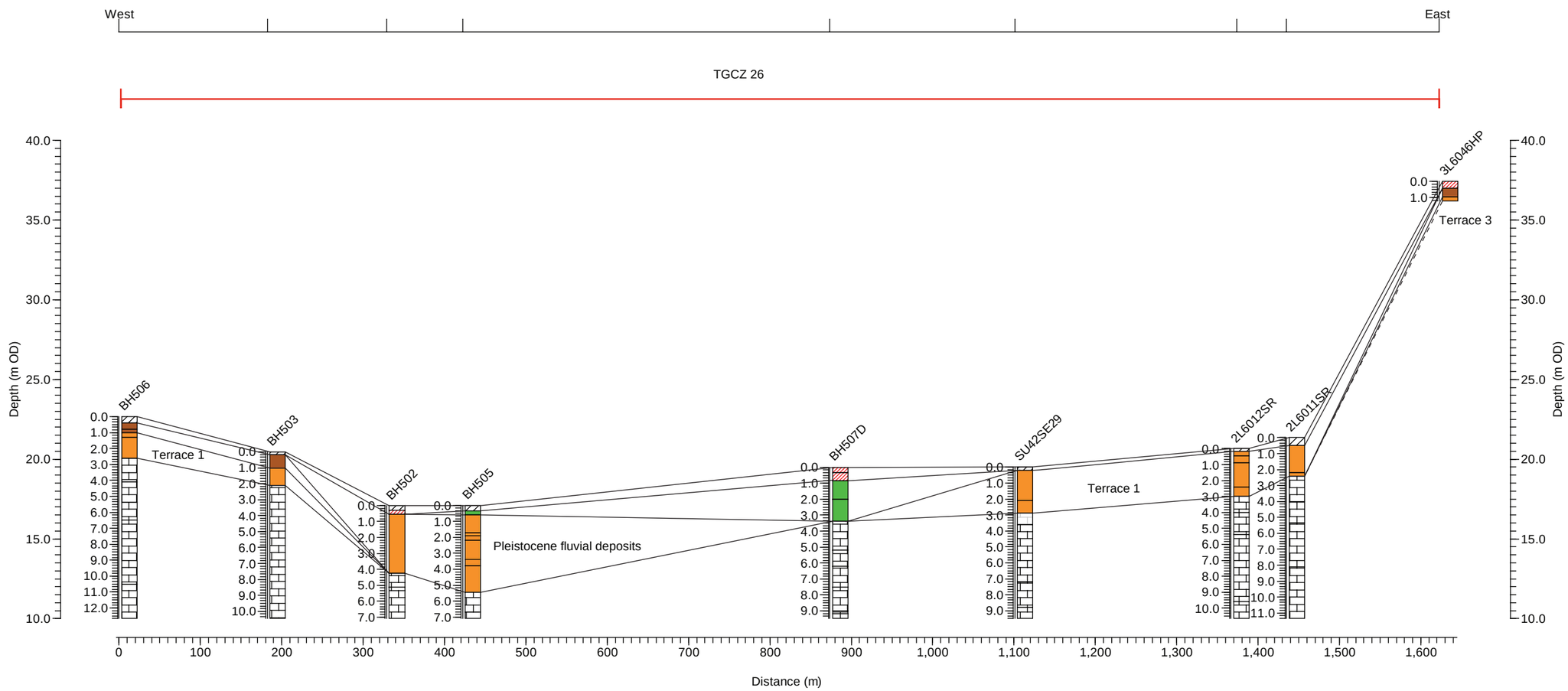
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Figure 35: GCZs 26–28

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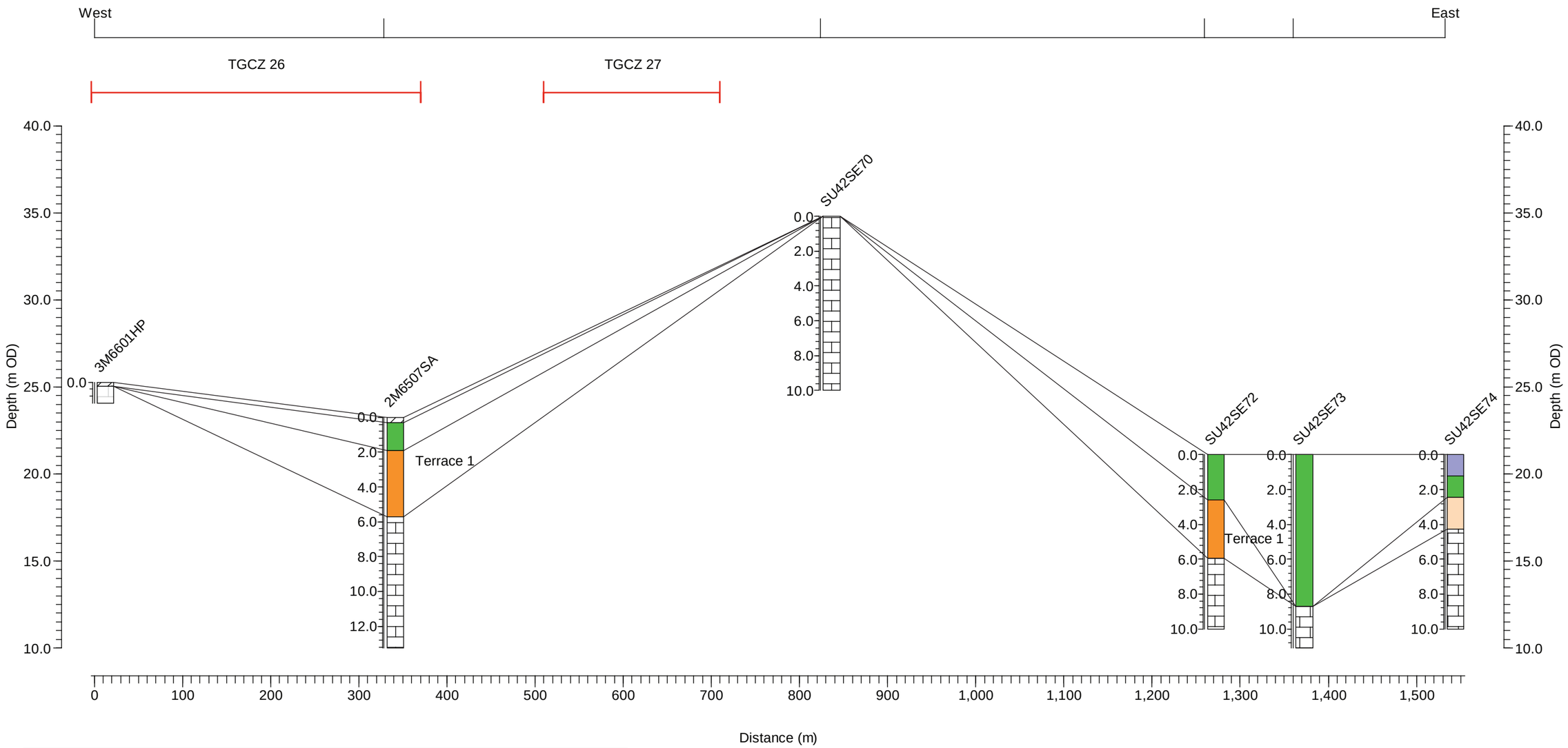
Stratigraphy	
Topsoil	Topsoil / Made Ground
Made Ground	
Alluvium	Holocene - River Itchen Alluvium
Head Deposits	Pleistocene Head-Brickearth
River Terrace Deposits	Pleistocene - River Itchen
Possible Bedrock	Bedrock
Bedrock	

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Figure 36: Transect 15

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Stratigraphy	
Topsoil	Topsoil
Alluvium	Holocene - River Itchen Alluvium
Tufa	
River Terrace Deposits	Pleistocene - River Itchen
Possible River Terrace Deposits	
Possible Bedrock	Bedrock
Bedrock	

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Figure 37: Transect 16

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GCZ 1a
GCZ 3
GCZ 2
GCZ 1b
GCZ 4a
GCZ 5a

SU70NW318
SU70NW323
SU70NW324
SU70NW320
SU70NW321
SU70NW322
SU70NW319
SU70NW65
SU70NW66
SU70NW67
SU70NW68
TP110
BH108
BH109
TP111
BH107
BH106

B2149
A3(M)
Rowlands Castle
Old Lodges
Durrants
Mays Coppice Farm
Lock's Coppice
Comley Cottage
West Leigh
Leigh Park
Woodberry Cottage
Southleigh Park House
Old Stable House
Horndean Road
Bedhampton Way
Purbrook Way
Middle Park Way
Wakefords Way
Petersfield Road
Prospect La
Tempest Ave
Park House Farm Way
Ensworth Common Rd
Bartons Rd
Castle Rd
Redhill Rd
Links La
Bowes Hill

111500 470000 470500 471000 471500 472000 472500 473000 473500 474000
111000 110500 110000 109500 109000 108500 108000 107500

Project Boundary
Geoarchaeological Character Zones
BGS Locations
BGS data point
GI Locations
Phase 1
Pipeline WRP Havant Thicket Reservoir
Open cut
Tunnel
Features Interpreted from LiDAR
Dry River Valley
Gully
Superficial geology
HEAD - CLAY, SILT, SAND AND GRAVEL
ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
RAISED MARINE DEPOSITS - SAND AND GRAVEL
RAISED MARINE DEPOSITS - SAND AND GRAVEL

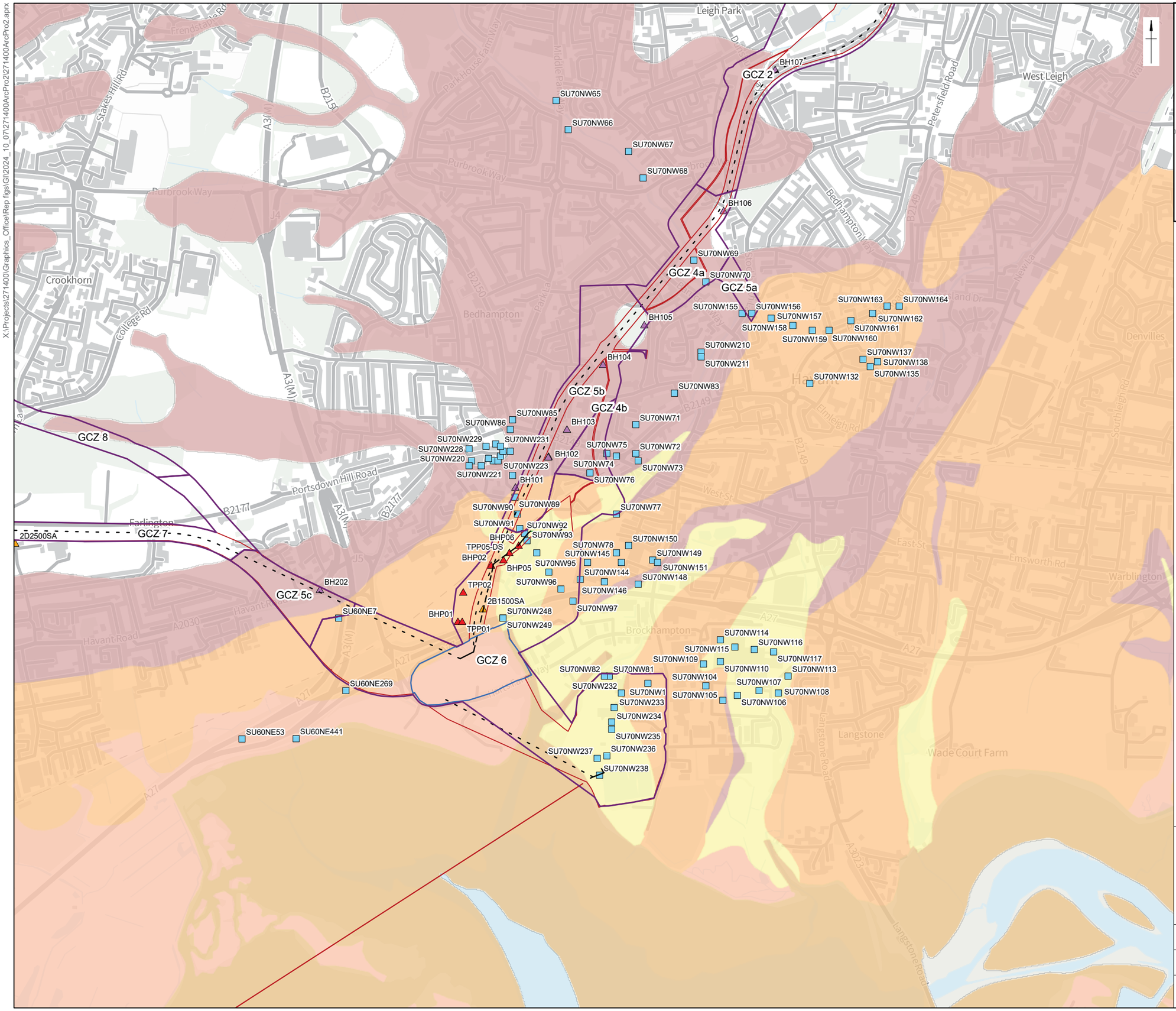
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Figure 38: GCZs 1-3 outline Project development plans

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Project Boundary
Geoarchaeological Character Zones

BGS Locations
- BGS data point

GI Locations
- Phase 1
- Phase 2
- Phase 3A

Outline Project Development Plans

Pipeline WRP Havant Thicket Reservoir
- Tunnel

Pipeline Budds Farm to WRP
- Open cut
- Tunnel

Pipeline Bedhampton Springs to Havant Thicket Reservoir
- Above Ground
- Open cut
- Trenchless
- Open cut
- Tunnel

New Water Recycling Plant

Superficial geology
- HEAD - CLAY, SILT, SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- RAISED MARINE DEPOSITS - SAND AND GRAVEL

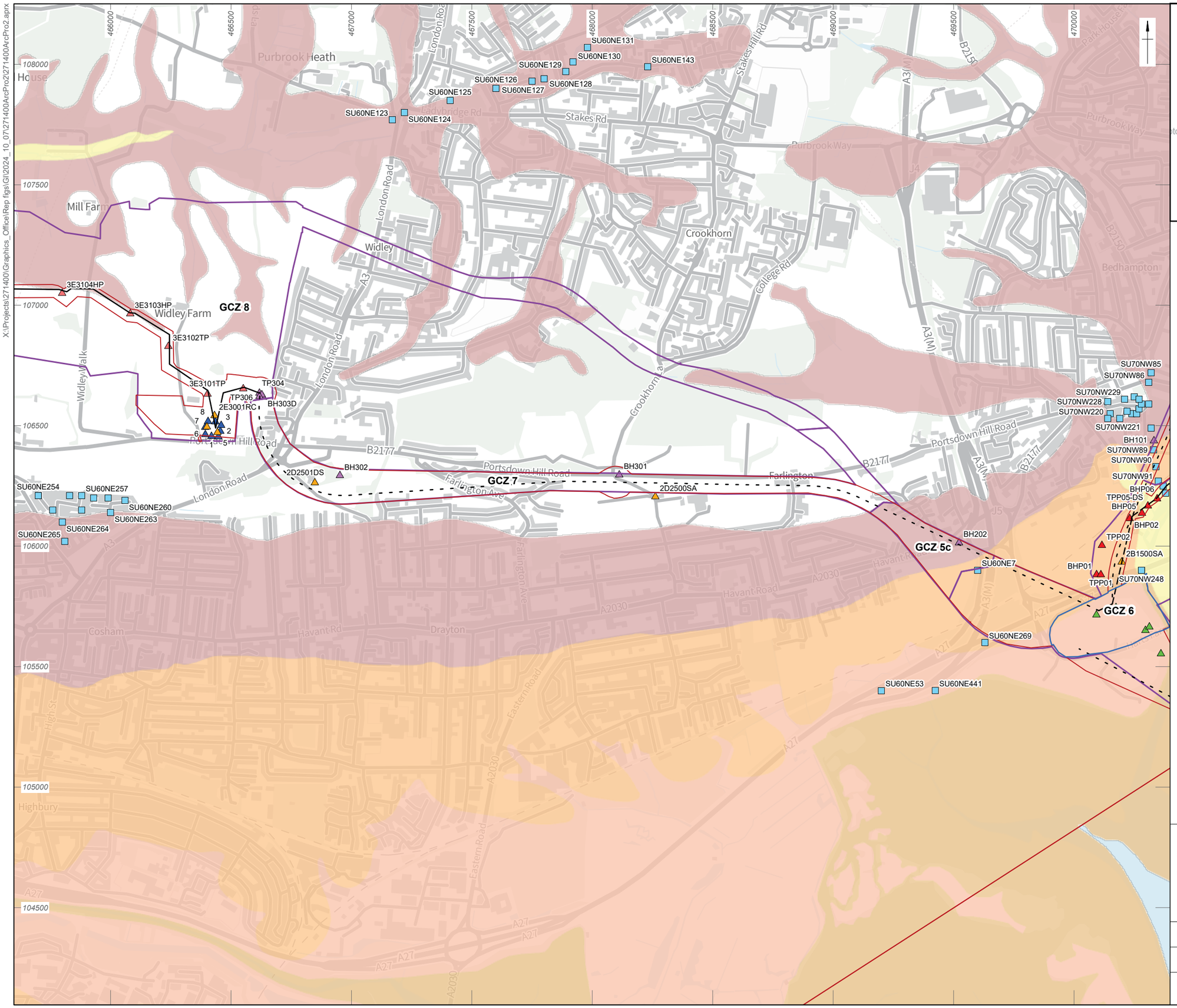
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Figure 39: GCZs 4-6 outline Project development plans

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Project Boundary
Geoarchaeological Character Zones
BGS data point

GI Data
- Phase 0
- Phase 1
- Phase 2
- Phase 3A
- Phase 3B
- Phase 3C

Outline Project Development Plans
- New Water Recycling Plant

Pipeline WRP Havant Thicket Reservoir
- Tunnel

Pipeline Budds Farm to WRP
- Tunnel

Pipeline Bedhampton Springs to Havant Thicket Reservoir
- Above Ground
- Open cut
- Trenchless

Pipeline High Lift Pumping Station to Otterbourne WTW
- Open cut
- Tunnel

Superficial geology
- HEAD - CLAY, SILT, SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- RAISED MARINE DEPOSITS - SAND AND GRAVEL

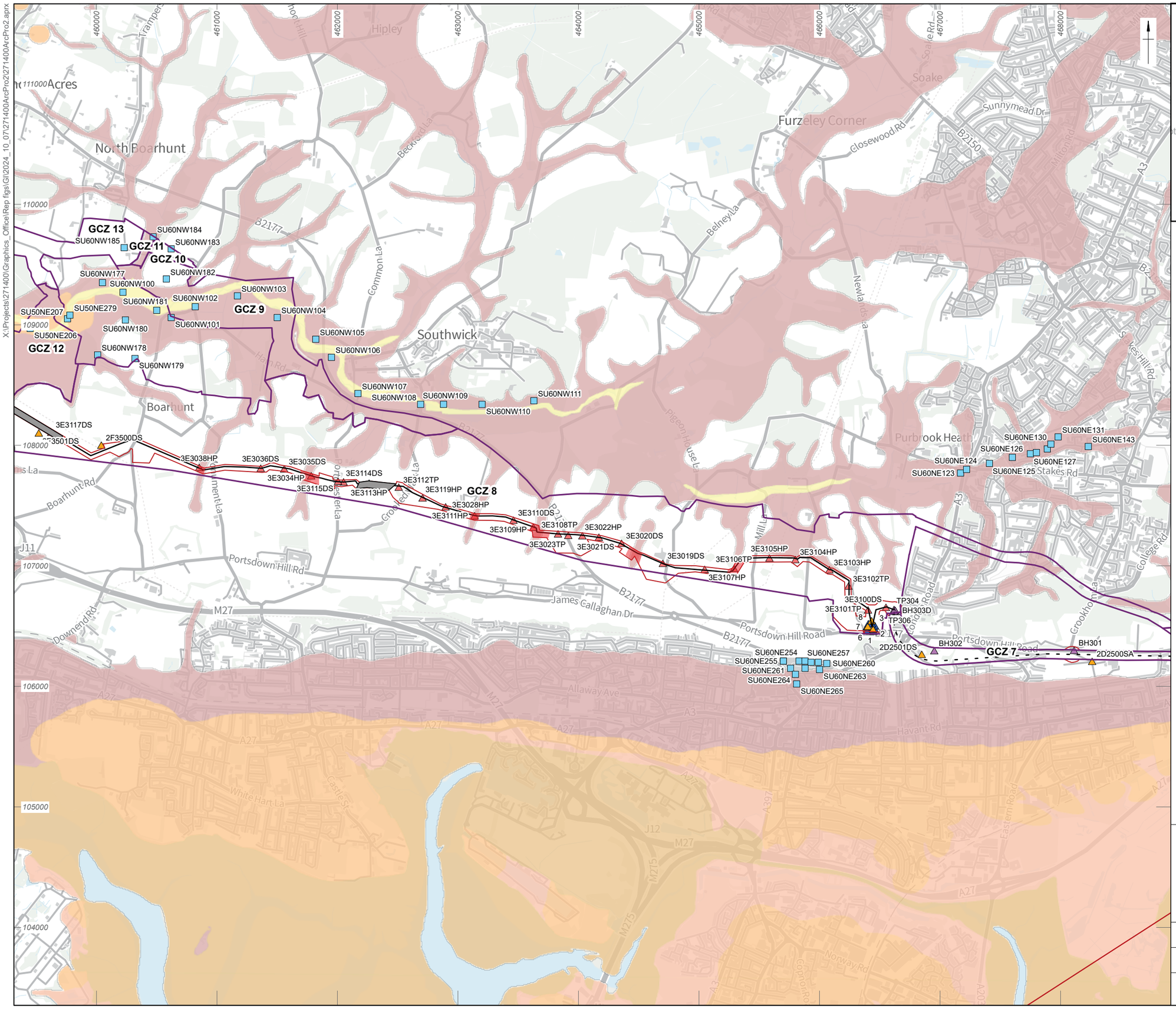
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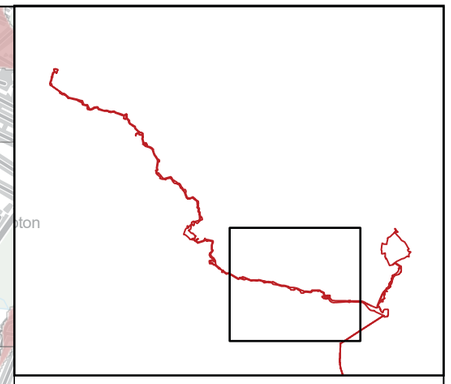
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Figure 40: GCZs 7 outline project development plans

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Project Boundary
Geoarchaeological Character Zones
Pipeline High Lift Pumping Station to Otterbourne WTW
Open cut
Tunnel
BGS data point
GI Data
Phase 1
Phase 2
Phase 3B
Phase 3C
Slope deposits in dry valleys
Potential for solution features

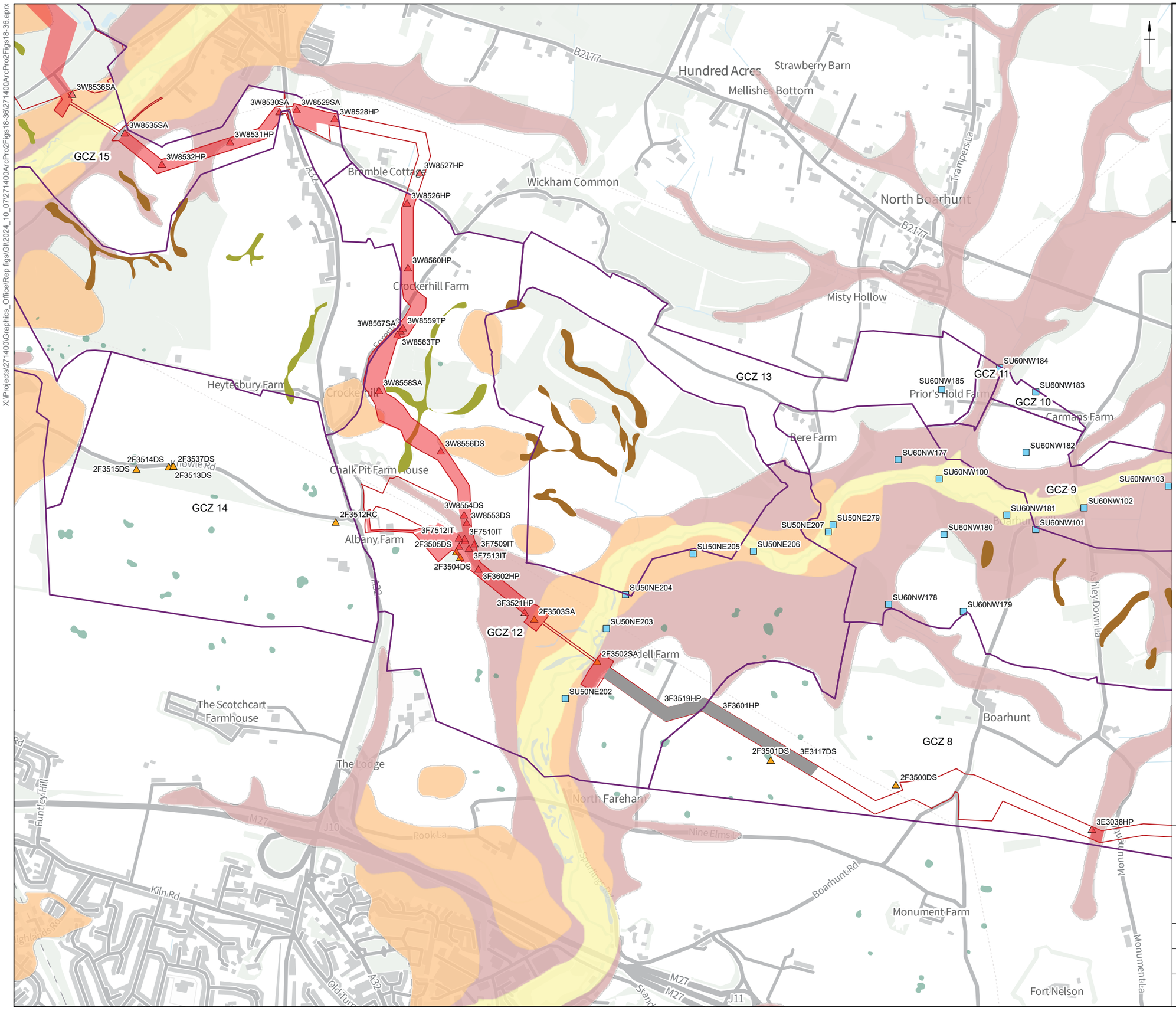
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Figure 41: GCZs 8–11 outline Project development plans

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- Project Boundary
- Geoarchaeological Character Zones
- Test Pit Survey
- Potential for solution features

BGS Locations
- BGS data point
- Phase 2
- Phase 3C

Features Interpreted from LiDAR
- Dry River Valley
- Gully
- Hollow
- Palaeochannel

Superficial geology
- HEAD - CLAY, SILT, SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- RAISED MARINE DEPOSITS - SAND AND GRAVEL

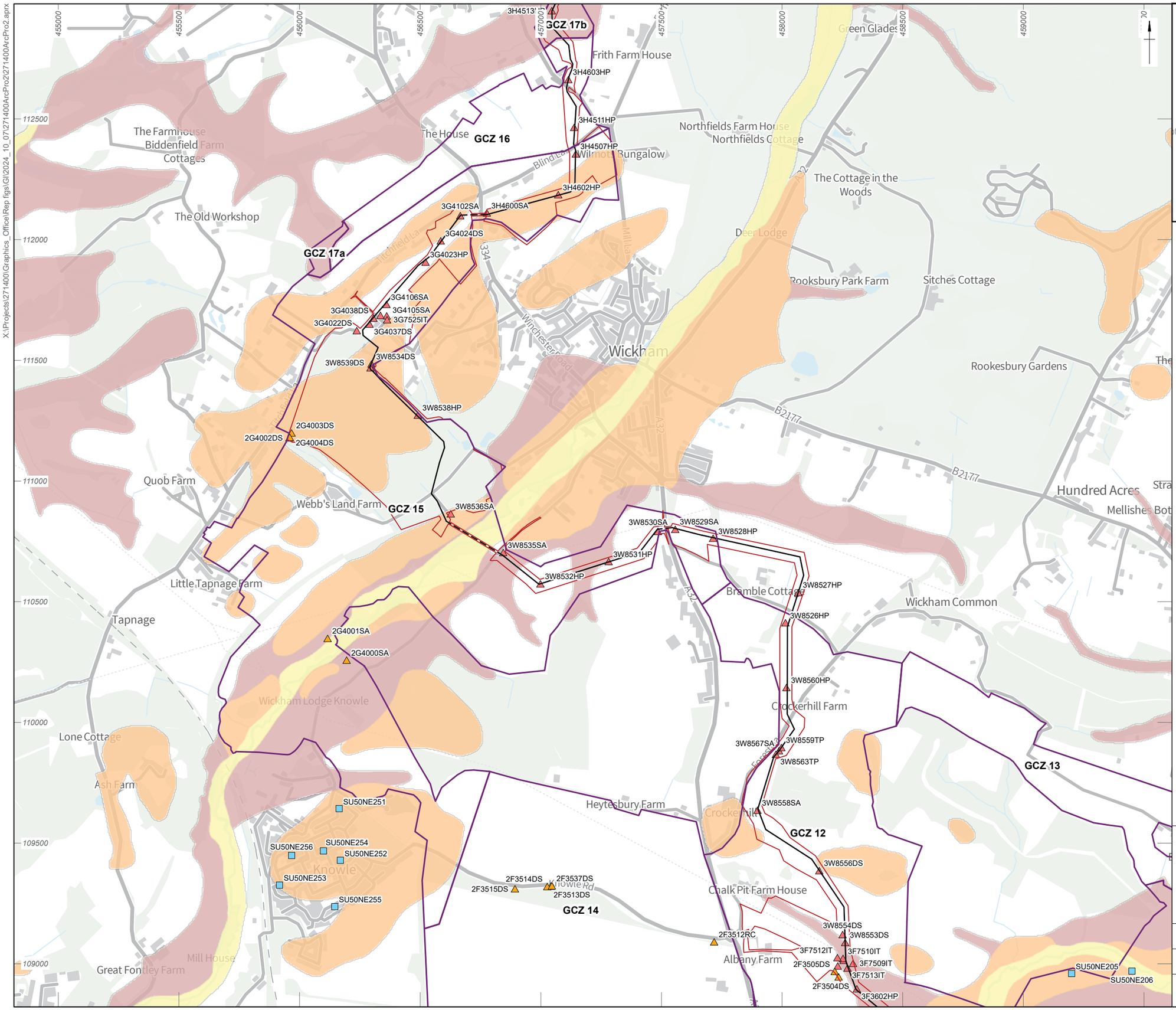
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Figure 42: GCZs 8–14 outline Project development plans

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Project Boundary

Pipeline High Lift Pumping Station to Otterbourne WTW

- Open cut
- Trenchless
- BGS data point
- Phase 2
- Phase 3C

Superficial geology

- HEAD - CLAY, SILT, SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- Geoarchaeological Character Zones

0 500 m

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Figure 43: GCZs 15 outline Project development plans

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GCZ 21
GCZ 20
GCZ 19
GCZ 18
GCZ 17b
GCZ 17a
GCZ 16
GCZ 15
3J5027DS
3J5017HP
3J5016TP
3J5014TP
3J5015SA
3J5013HP
3J5102HP
3J5101HP
3J5007DS
3J5004DS
3J5003HP
3J5002SA
2H4503DS
2H4502DS
3H4517SA
2H4500DR
2H4501DR
3H4513HP
3H4603HP
3H4511HP
3H4507HP
3H4602HP
3G4102SA
3H4600SA
3G4024DS
3G4023HP
3G4106SA
3G4038DS
3G4105SA
3G7525IT
3G4022DS
3G4037DS
3W8534DS
3W8539DS
Glebe
Twelve Oaks Farm
Heathfield House
Forest Lodge
Longridge Farm
Waltham Chase
Woodmans Farm
Nation's Farm
Oak Avenue
Middle Barn
Spencer Place Farm
Bishop's Hill House
Hawksnest Farm
Hawk's Nest Cottage
Lyons Copse
Marriot Meon Valley Hotel and Country Club
Shirrell Heath
Twynhams Hill
Kingsmead
Southside Farm
Row Ash House
Row Ash
St John's Church (remains of)
Shedfield
Hall Court Cottage
Faerland
Frith Farm House
Green Glades
The Farmhouse
Biddenfield Farm Cottages
The House
Northfields Farm House
Northfields Cottage
Wilmot Bungalow
The Cottage in the Woods
The Old Workshop
Deer Lodge
Rooksbury Park Farm
Sitches Cottage
Wickham
Rookesbury
Forest Rd
Mislingford Rd
Bishop's Wood Rd
Gravel Hill
Curridge La
Bull La
Solomons La
Sandy La
Hospital Rd
Newmans Hill
High St
Church Rd
St Annes La
Frith La
Blind La
Mill La
Winchester Road
A334
A32
B2177
115500
115000
114500
114000
113500
113000
112500
112000
111500
454500
455000
455500
456000
456500
457000
457500
458000
458500

Project Boundary
Geoarchaeological Character Zones
Pipeline High Lift Pumping Station to Otterbourne WTW
Open cut
Trenchless
Phase 2
Phase 3B
Phase 3C
Superficial geology
HEAD - CLAY, SILT, SAND AND GRAVEL
ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
RAISED MARINE DEPOSITS - SAND AND GRAVEL
RAISED MARINE DEPOSITS - SAND AND GRAVEL

0 500 m

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Figure 44: GCZs 16–20 outline
Project development plans

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GCZ 22b
GCZ 23
GCZ 22a
GCZ 21
GCZ 20
GCZ 19
GCZ 18
3K5513HP
3K5604HP
3K5511DS
2K5501SR
2K5500SR
3J5027DS
3J5017HP
3J5016TP
3J5014TP
3J5015SA
3J5013HP
3J5102HP
3J5101HP
3J5007DS
3J5004DS
3J5003HP
Durley St
Durley Manor Farm
Perlins Farm
Mincingfield Farm
Brown Heath Cottage
Brown Heath
Deorlye
Netherhill Farm
Durley Mill Farm
Wangfield Poultry Farm
Meadow View
Tangier View Farm
Ford Farm
Brooklands Farm
Park House
Locks Farm House
Thickets Farm
Chase Moor Farm
Bay Tree House
Maple Farm
Harfields Bungalow
Treefield Farm
Oak Avenue
Nation's Farm
Woodmans Farm
Middle Barn
Lyons Copse
Borderhill Stables
Glebe
Newtown
Bishop's Waltham
Waltham Chase
Northbrook
Hoe
Hoe Rd
Manor Rd
Kytes La
Mill La
Galcot La
Curdridge La
Botley Road
Winchester Road
Shore La
Bull La
Clewers Hill
Lochhams Rd
Sandy La
B2177
B3035
B3035
B3035
452000
452500
453000
453500
454000
454500
455000
455500
456000
117500
117000
116500
116000
115500
115000
114500
114000

Geoarchaeological Character Zones
Project Boundary

Pipeline High Lift Pumping Station to Otterbourne WTW
- Open cut
- Trenchless
- Phase 2
- Phase 3B
- Phase 3C

Superficial geology
- HEAD - CLAY, SILT, SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- RAISED MARINE DEPOSITS - SAND AND GRAVEL

0 500 m

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Figure 45: GCZs 21–22 outline
Project development plans

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GCZ 27
GCZ 26
GCZ 25
GCZ 24
GCZ 23

SU42SE72
SU42SE73
SU42SE74
SU42SE28
SU42SE30
SU42SE29
SU42SE31
SU42SE33/A
SU42SE34
SU42SE36
SU42SE37
SU42SE35
SU42SE59
SU42SE141
SU42SE60
SU52SW32
SU52SW24
SU51NW6
SU51NW41
SU51NW3
SU51NW2
SU51NW34

BH507C
BH507A
BH507
TP502
TP503
BH501
2L6012SR
2L6011SR
3L6046HP
3L6045HP
45
2L6010DR
2L6009DR
2L6008DR
2L6007DR
2L6006TP
2L6005SA
2L6003SA
2L6002SA
2L6000TP
43
44
3L6027HP
3L6026HP
3L6107DS
3L6106DS
3L6024HP-B
3L6024HP
42
46
3L6104HP
3L6103HP
3L6017HP
3L6102HP
3L6101DS
3L6015HP
3L6100HP
3L6013HP
2K5503DS
2K5535DS
2K5502DS
3K5531DS
3K5610HP
3K5609HP
3K5530HP
28
35
41
27
40
29
39
20

Colden Common
Brambridge
Lord's Wood
Nob's Crook
Fisher's Pond
Crowdhill
Lower Upham
Henstin
Church La
Church Rd
Highbridge Road
Hursttla
Sandy La
Alma La
Durley Hall La
Mortimers Lane
Botley Road
Knowle La
Sycamore Drive
B3354
B3335
B3037
B2177
Fair Oak Rd

447000
447500
448000
448500
449000
449500
450000
450500
451000
451500
452000
452500
123000
122500
122000
121500
121000
120500
120000
119500
119000
118500
118000

Geoarchaeological Character Zones
Project Boundary
Pipeline High Lift Pumping Station to Otterbourne WTW
Open cut
Trenchless
BGS data point
Phase 1
Phase 2
Phase 3A
Phase 3B
Phase 3C
Superficial geology
HEAD - CLAY, SILT, SAND AND GRAVEL
ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
RAISED MARINE DEPOSITS - SAND AND GRAVEL
RAISED MARINE DEPOSITS - SAND AND GRAVEL

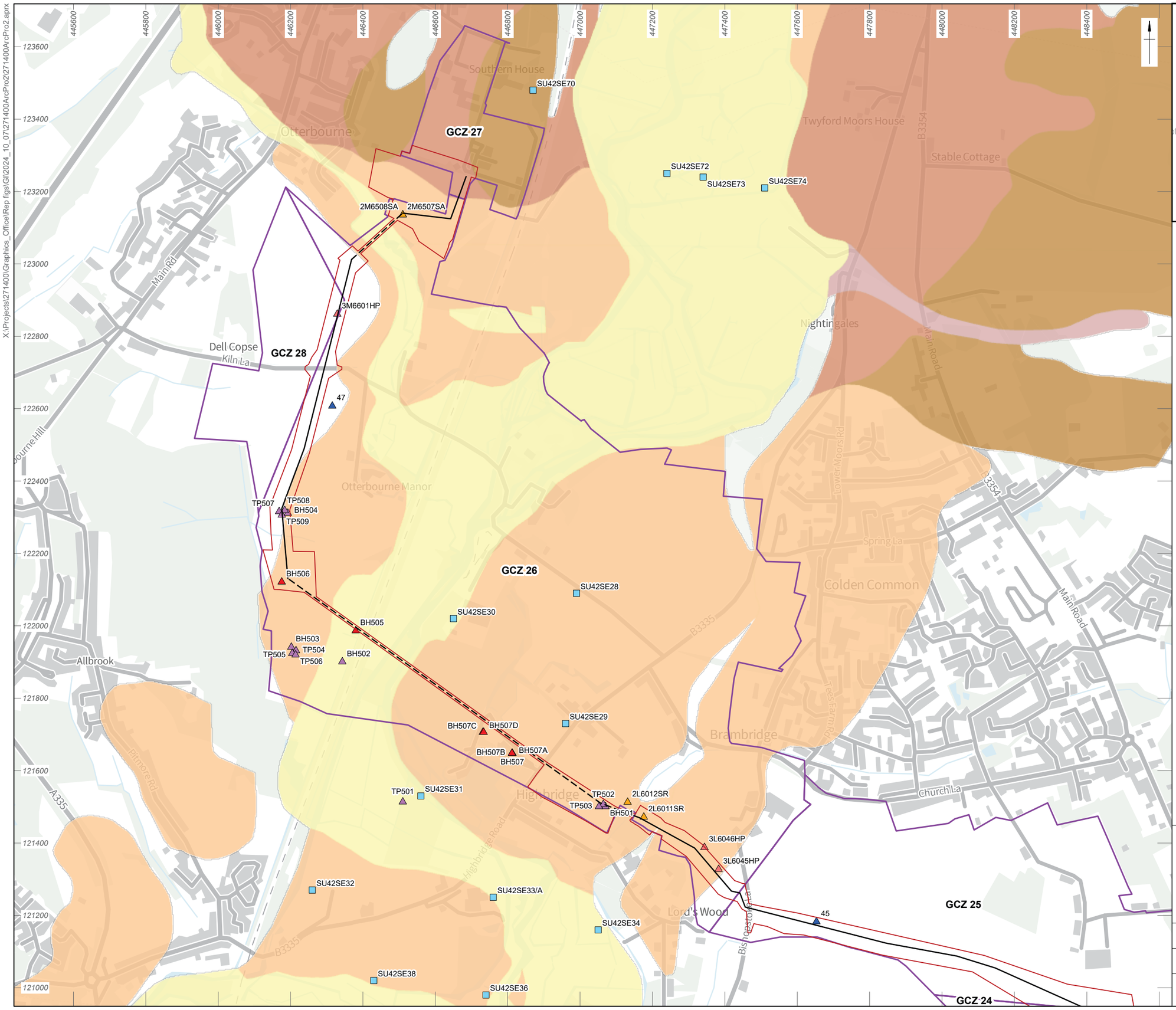
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Figure 46: GCZs 23–25 outline
Project development plans

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Geoarchaeological Character Zones

Project Boundary

Pipeline High Lift Pumping Station to Otterbourne WTW

- Open cut
- Trenchless
- BGS data point
- Phase 1
- Phase 2
- Phase 3A
- Phase 3B
- Phase 3C

Superficial geology

- HEAD - CLAY, SILT, SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- RAISED MARINE DEPOSITS - SAND AND GRAVEL

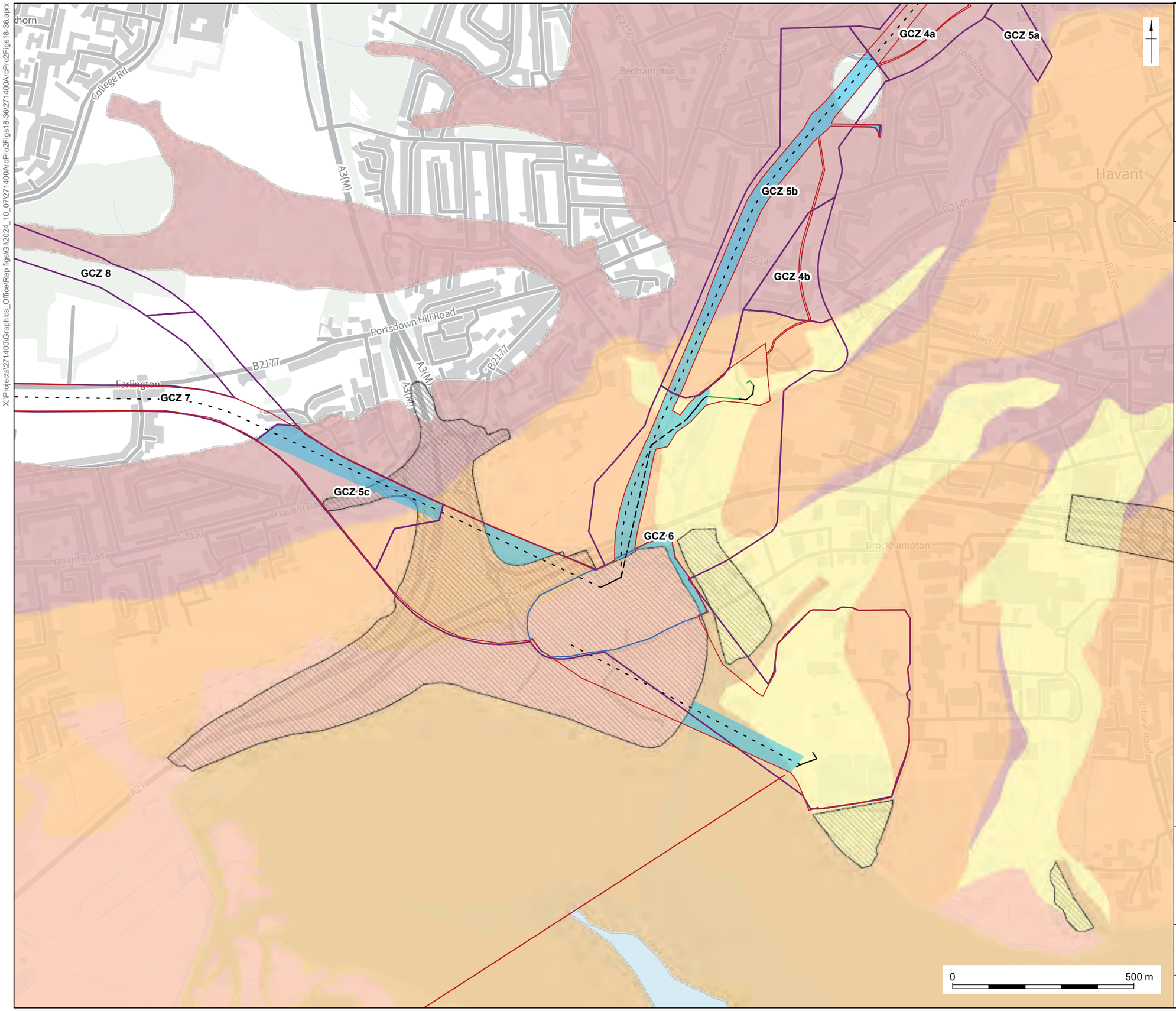
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Figure 47: GCZs 26–28 outline
Project development plans

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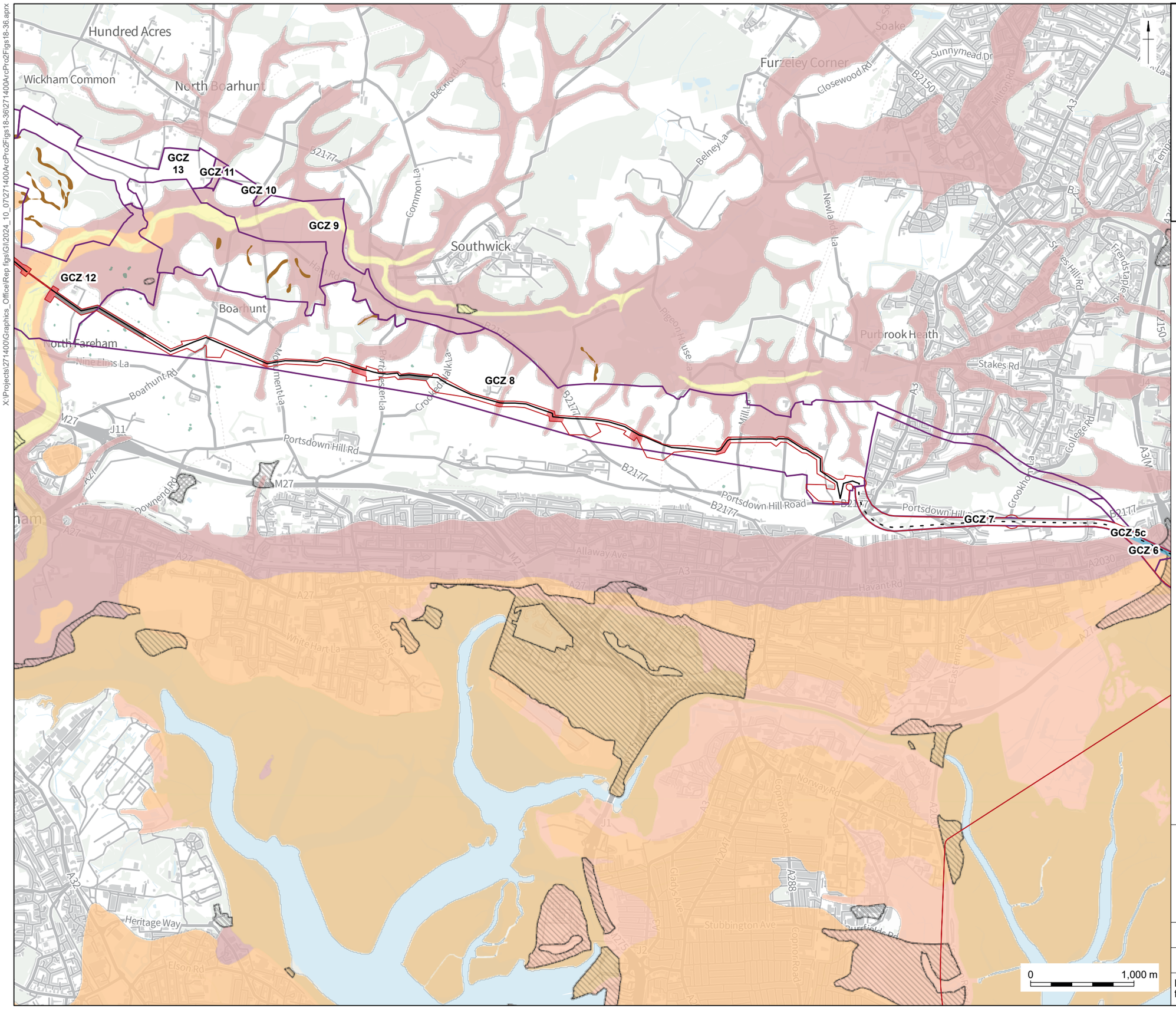
Project Boundary
Geoarchaeological Character Zones
Outline Project Development Plans
New Water Recycling Plant
Pipeline WRP Havant Thicket Reservoir
Tunnel
Pipeline Budds Farm to WRP
Open cut
Tunnel
Pipeline Bedhampton Springs to Havant Thicket Reservoir
Above Ground
Open cut
Trenchless
Pipeline High Lift Pumping Station to Otterbourne WTW
Open cut
Tunnel
Recommendations for Geoarchaeological Investigations
Test Pits/Boreholes (Tunnel Entrances/ Shafts, Compounds, Piling)
Test Pit Survey
Borehole Survey
Geophysical Survey
Artificial ground
WORKED GROUND (UNDIVIDED) - VOID
MADE GROUND (UNDIVIDED) - ARTIFICIAL DEPOSIT
INFILLED GROUND - ARTIFICIAL DEPOSIT
Superficial geology
HEAD - CLAY, SILT, SAND AND GRAVEL
ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
RAISED MARINE DEPOSITS - SAND AND GRAVEL
RAISED MARINE DEPOSITS - SAND AND GRAVEL

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Figure 48: GCZs 5b-c and 6 recommendations for geoarchaeological investigations

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- Project Boundary
- Geoarchaeological Character Zones

Pipeline High Lift Pumping Station to Otterbourne WTW

- Open cut
- Trenchless
- Tunnel

Recommendations for Geoarchaeological Investigations

- Test Pits/Boreholes (Tunnel Entrances/ Shafts, Compounds, Piling)
- Test Pit Survey
- Geophysical Survey

Features Interpreted from LiDAR

- Dry River Valley
- Hollow
- Palaeochannel

Artificial ground

- WORKED GROUND (UNDIVIDED) - VOID
- MADE GROUND (UNDIVIDED) - ARTIFICIAL DEPOSIT
- INFILLED GROUND - ARTIFICIAL DEPOSIT

Superficial geology

- HEAD - CLAY, SILT, SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- RAISED MARINE DEPOSITS - SAND AND GRAVEL

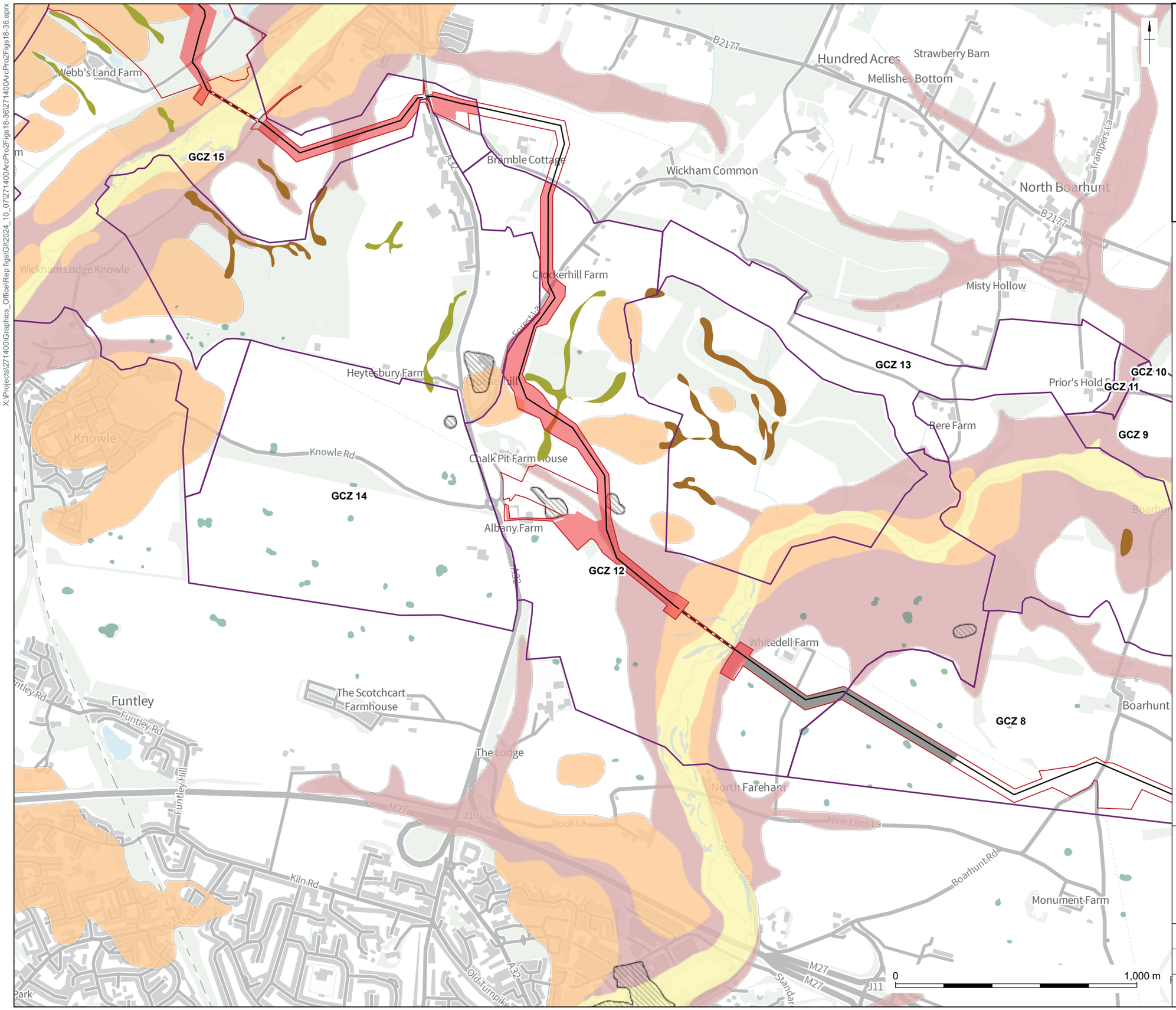
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Figure 49: GCZ 8 recommendations for geoarchaeological investigations

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Project Boundary
Geoarchaeological Character Zones

Pipeline High Lift Pumping Station to Otterbourne WTW
- Open cut
- Trenchless

Recommendations for Geoarchaeological Investigations
- Test Pit Survey
- Geophysical Survey

Features Interpreted from LiDAR
- Dry River Valley
- Gully
- Hollow
- Palaeochannel

Artificial ground
- WORKED GROUND (UNDIVIDED) - VOID
- MADE GROUND (UNDIVIDED) - ARTIFICIAL DEPOSIT
- INFILLED GROUND - ARTIFICIAL DEPOSIT

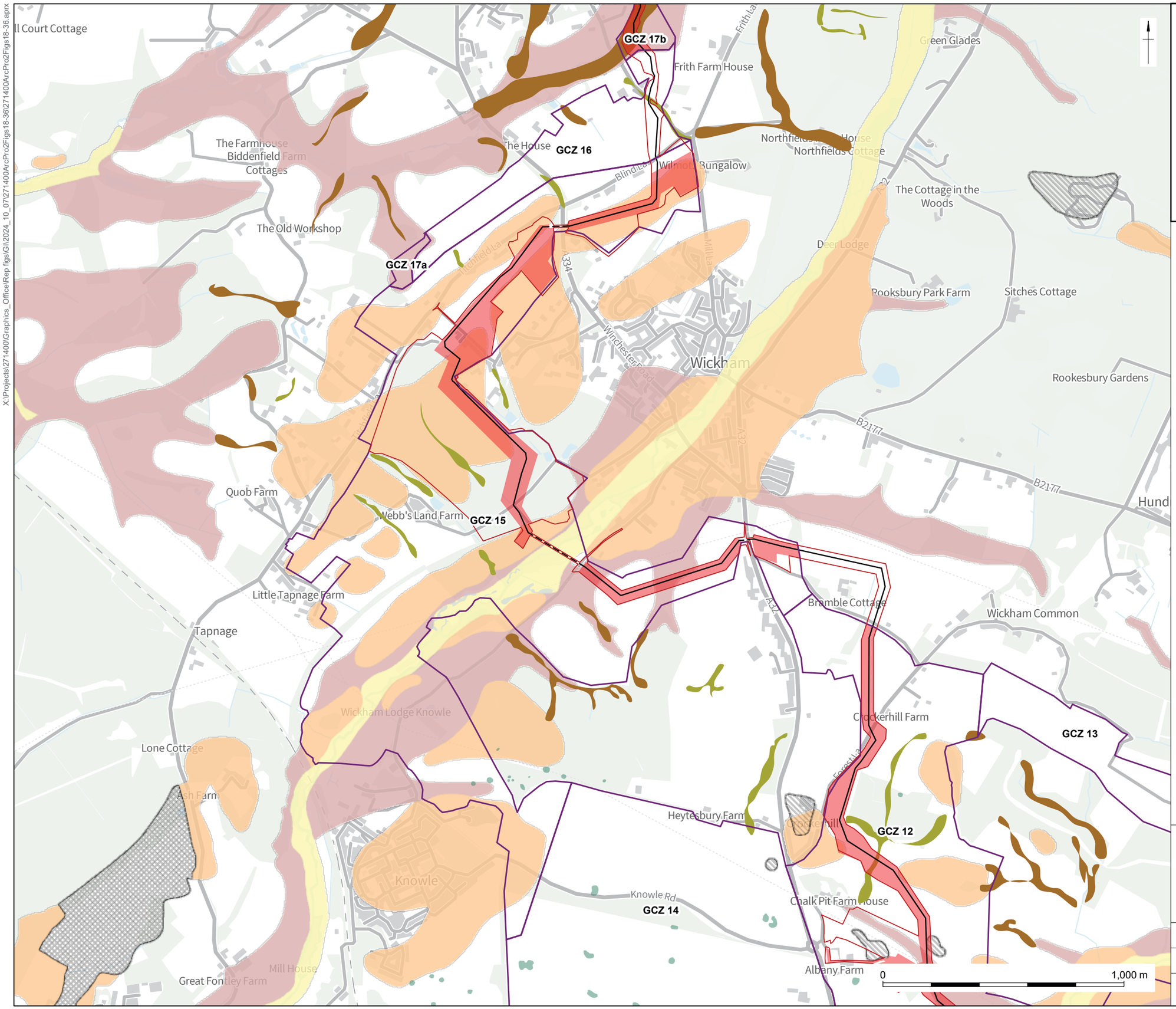
Superficial geology
- HEAD - CLAY, SILT, SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- RAISED MARINE DEPOSITS - SAND AND GRAVEL

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Figure 50: GCZ 12 recommendations for geoarchaeological investigations

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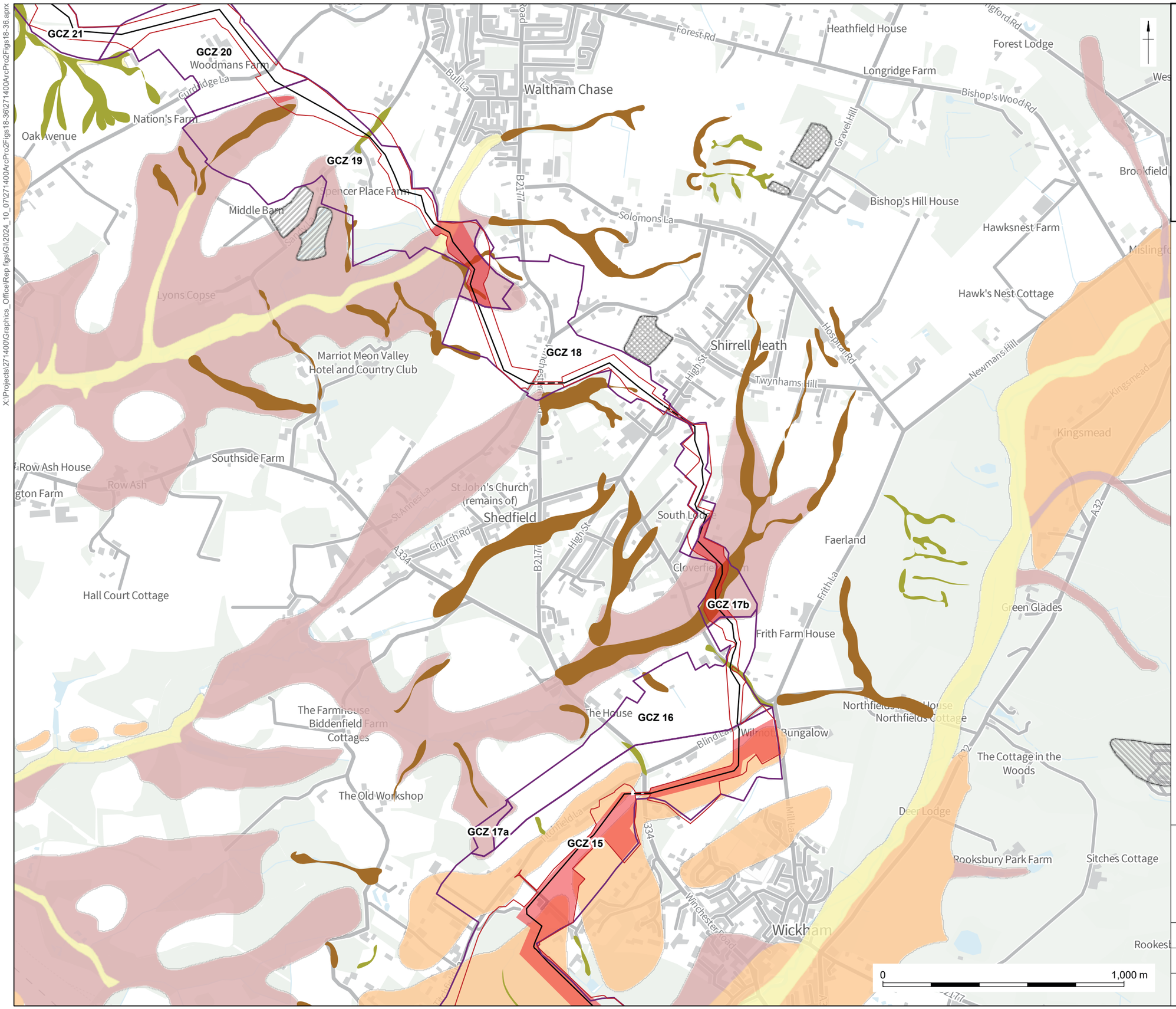
Project Boundary
Geoarchaeological Character Zones
Pipeline High Lift Pumping Station to Otterbourne WTW
Open cut
Trenchless
Recommendations for Geoarchaeological Investigations
Test Pit Survey
Features Interpreted from LiDAR
Dry River Valley
Gully
Hollow
Palaeochannel
Artificial ground
WORKED GROUND (UNDIVIDED) - VOID
MADE GROUND (UNDIVIDED) - ARTIFICIAL DEPOSIT
INFILLED GROUND - ARTIFICIAL DEPOSIT
Superficial geology
HEAD - CLAY, SILT, SAND AND GRAVEL
ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
RAISED MARINE DEPOSITS - SAND AND GRAVEL
RAISED MARINE DEPOSITS - SAND AND GRAVEL

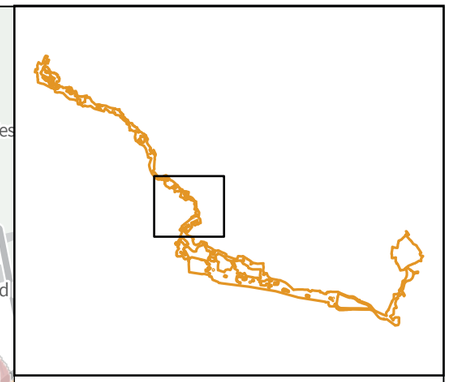
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Figure 51: GCZ 15 recommendations for geoarchaeological investigations

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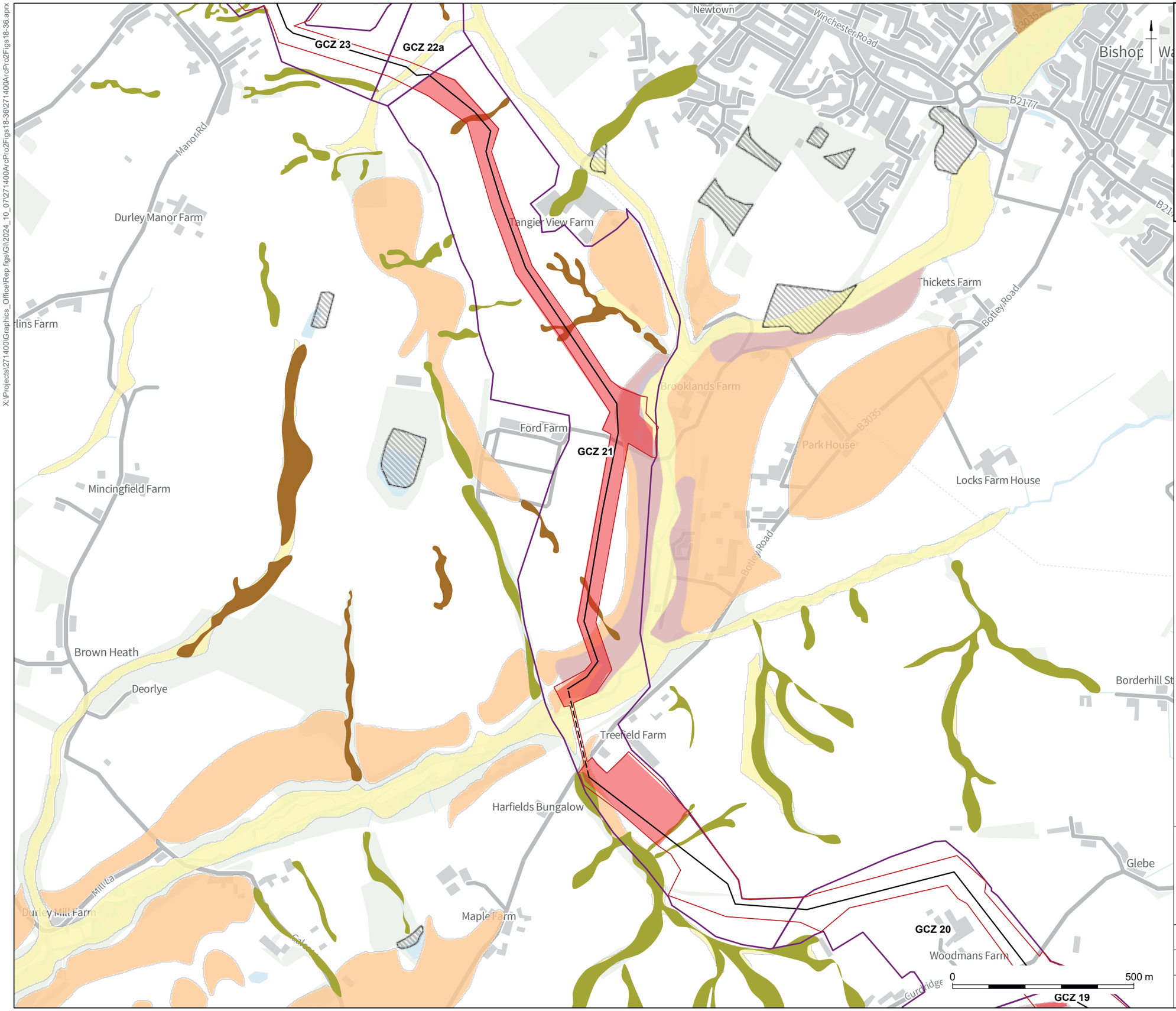
Project Boundary
Geoarchaeological Character Zones
Pipeline High Lift Pumping Station to Otterbourne WTW
Open cut
Trenchless
Test Pit Survey
Features Interpreted from LiDAR
Dry River Valley
Gully
Artificial ground
WORKED GROUND (UNDIVIDED) - VOID
MADE GROUND (UNDIVIDED) - ARTIFICIAL DEPOSIT
INFILLED GROUND - ARTIFICIAL DEPOSIT
Superficial geology
HEAD - CLAY, SILT, SAND AND GRAVEL
ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
RAISED MARINE DEPOSITS - SAND AND GRAVEL
RAISED MARINE DEPOSITS - SAND AND GRAVEL

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Figure 52: GCZs 17b and 19 recommendations for geoarchaeological investigations

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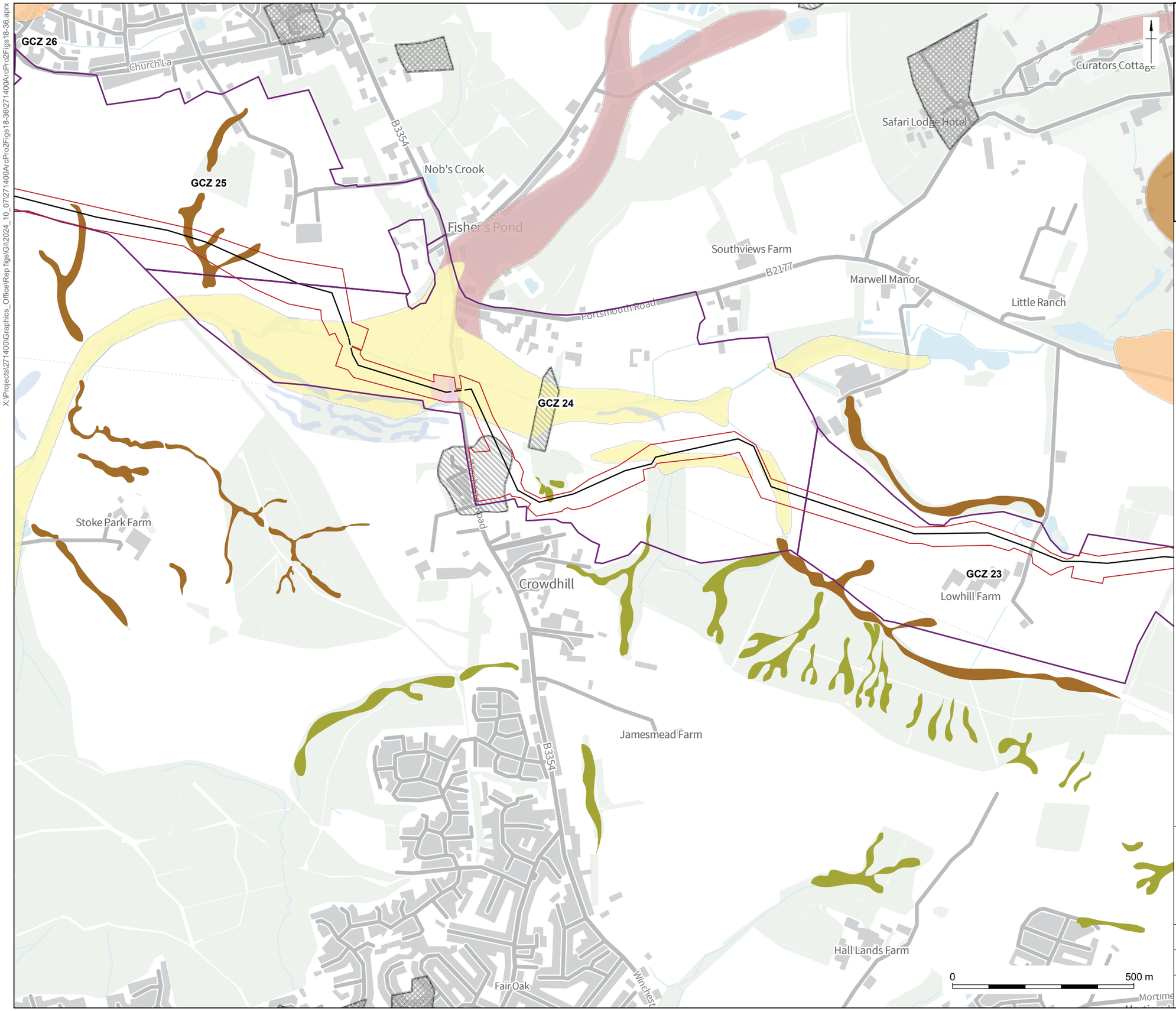
Project Boundary
Geoarchaeological Character Zones
Pipeline High Lift Pumping Station to Otterbourne WTW
Open cut
Trenchless
Recommendations for Geoarchaeological Investigations
Test Pit Survey
Features Interpreted from LiDAR
Dry River Valley
Gully
Palaeochannel
Artificial ground
WORKED GROUND (UNDIVIDED) - VOID
MADE GROUND (UNDIVIDED) - ARTIFICIAL DEPOSIT
INFILLED GROUND - ARTIFICIAL DEPOSIT
Superficial geology
HEAD - CLAY, SILT, SAND AND GRAVEL
ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
RAISED MARINE DEPOSITS - SAND AND GRAVEL
RAISED MARINE DEPOSITS - SAND AND GRAVEL

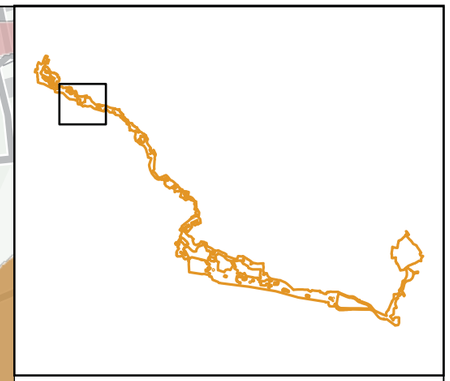
Coordinate system: OSGB 1936 British National Grid
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Figure 53: GCZ 21 recommendations for geoarchaeological investigations

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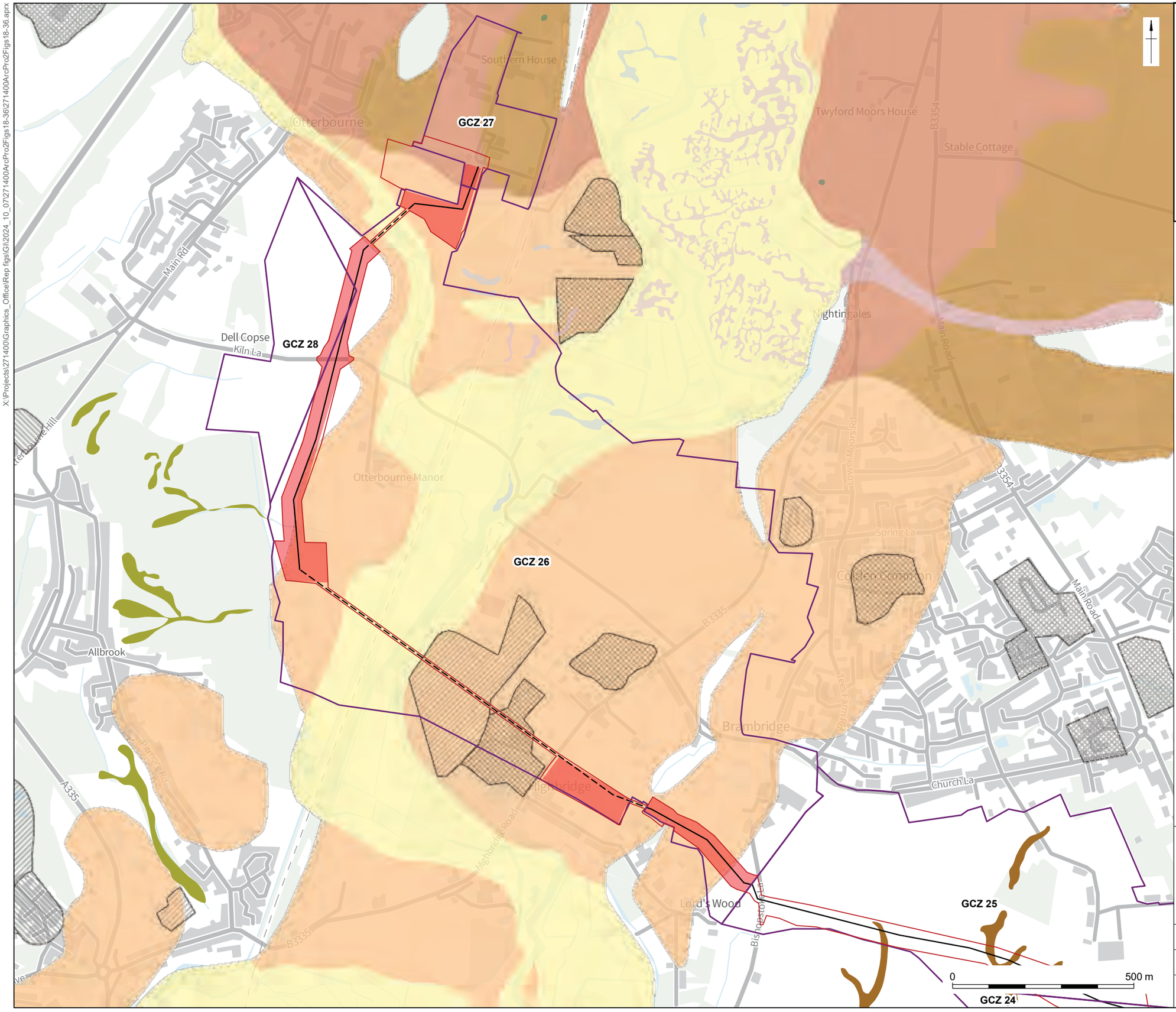
Project Boundary
Geoarchaeological Character Zones
Pipeline High Lift Pumping Station to Otterbourne WTW
Open cut
Trenchless
Recommendations for Geoarchaeological Investigations
Borehole Survey
Features Interpreted from LiDAR
Dry River Valley
Gully
Palaeochannel
Artificial ground
WORKED GROUND (UNDIVIDED) - VOID
MADE GROUND (UNDIVIDED) - ARTIFICIAL DEPOSIT
INFILLED GROUND - ARTIFICIAL DEPOSIT
Superficial geology
HEAD - CLAY, SILT, SAND AND GRAVEL
ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
RAISED MARINE DEPOSITS - SAND AND GRAVEL
RAISED MARINE DEPOSITS - SAND AND GRAVEL

Coordinate system: OSGB 1936 British National Grid
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Figure 54: GCZ 24 recommendations for geoarchaeological investigations

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Project Boundary
Geoarchaeological Character Zones

Pipeline High Lift Pumping Station to Otterbourne WTW
- Open cut
- Trenchless

Recommendations for Geoarchaeological Investigations
- Test Pit Survey

Features Interpreted from LiDAR
- Dry River Valley
- Gully
- Hollow
- Palaeochannel
- Roddon

Artificial ground
- WORKED GROUND (UNDIVIDED) - VOID
- MADE GROUND (UNDIVIDED) - ARTIFICIAL DEPOSIT
- INFILLED GROUND - ARTIFICIAL DEPOSIT

Superficial geology
- HEAD - CLAY, SILT, SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS - GRAVEL, SAND AND SILT
- RAISED MARINE DEPOSITS - SAND AND GRAVEL
- RAISED MARINE DEPOSITS - SAND AND GRAVEL

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Figure 55: GCZ 26 recommendations for geoarchaeological investigations







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