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**FORMER BRITISH HOME
STORES,
GLOUCESTER:
GEOARCHAEOLOGICAL
ASSESSMENT OF
BOREHOLE STRATIGRAPHY**

Prepared for Cotswold
Archaeology Ltd

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*Former British Home Stores,
Gloucester: Geoarchaeological Assessment Of Borehole Stratigraphy*

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SUMMARY

This document reports on the geoarchaeological significance of strata recorded in four geoarchaeological boreholes and one geotechnical borehole all drilled by Geotechnical Engineering Ltd at the former British Home Stores site in the city of Gloucester, Gloucestershire. The geoarchaeological work was carried out by ARCA on behalf of Cotswold Archaeology Ltd in August and October 2020.

The following sedimentary sequence was found on the site:

- 1. Made Ground*
- 2. Archaeological Strata*
- 3. Cheltenham Sand and Gravel*
- 4. Blue Lias and Charmouth Mudstone Formation (Triassic: Lias Group bedrock).*

The Lias Group bedrock was found between 13.32m OD (5.01m bgl) in BH2 in the north and 15.17m OD (3.25m bgl) in BH1 in the southwest of the site.

Superficial geological strata aggraded over the weathered mudstone and are composed of a heterogeneous assemblage of sandy gravels, sands and silt/clays that may, in part, represent the Holt Heath Sand and Gravel Member terrace on altitudinal evidence. The strata occupy a maximum of 1.28m in thickness. The superficial geology is absent from BH5 where archaeological deposits truncate the bedrock.

A fill of a possible minor channel containing ceramic building material (cbm) truncates the superficial geology in BH2. Archaeological deposits are varied in thickness (maximum c. 3.5m in BH2) and lithology. They appear to represent layers of demolition and humic silt clays of undetermined origin.

Aside from fragments of a possible Roman brick and grains of cbm, no artefactual or palaeoenvironmental material was recorded.

1. INTRODUCTION

1.1 Project outline

1.1.1 This report discusses the results of a geoarchaeological investigation of four geoarchaeological boreholes and one geotechnical borehole drilled by Geotechnical Engineering Ltd at the former British Home Stores site in the city of Gloucester, Gloucestershire (henceforth 'the site'). The investigation was carried out by ARCA on behalf of Cotswold Archaeology Ltd in August and October 2020.

1.2 Structure of the report

1.2.1 The report is arranged as follows: Section 1 provides essential background to the project and the aims of the present work. Section 2 outlines the methodology employed to carry out the fieldwork, subsequent data processing and laboratory examination. The results of the logging of the stratigraphy are presented in Section 3, while Section 4 assesses the significance of the results in relation to the aims that have been set. A bibliography and appendices providing details of borehole locations and lithology complete the document.

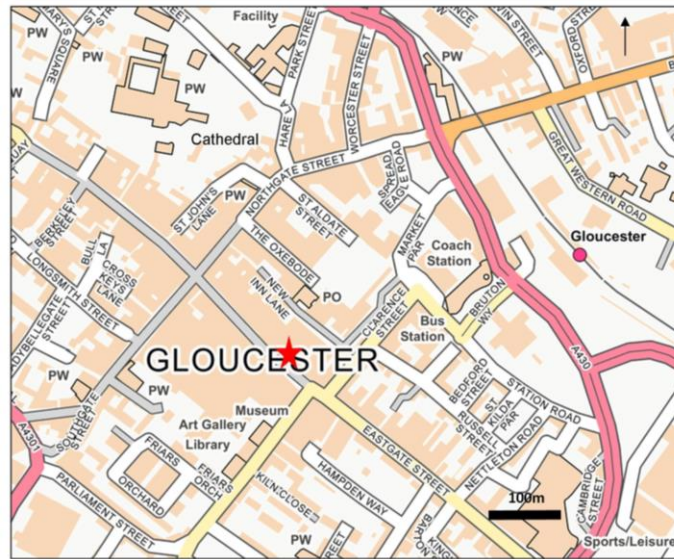
1.3 Location, topography and geology

1.3.1 The site was formerly the British Home Stores department building fronting Eastgate Street in the city of Gloucester. It occupies c. 0.24ha and lies c. 350m south southeast of the Cathedral. The site is centred on NGR SO 83293 18471 at an elevation of c. 15.3m OD (Figure 1 and Figure 2).

1.3.2 The archaeological potential of the site is high for remains dating from the Roman, Medieval and Post-Medieval periods. Scheduled Roman remains are located on the site and are of national significance. The development of the site involves the reuse of the existing building with modifications in the form of lift shafts and service trenching that would affect the buried archaeology (Bedford (2019, p.3-4). To mitigate these effects a scheme of archaeological trenching and recording was planned including four geoarchaeological boreholes to sample the entire stratigraphic thickness of the deposits. Prior to this in February 2020, a geotechnical borehole was drilled on the site and the core logged by Cotswold Archaeology Ltd. Geoarchaeological drilling began on 3rd August 2020 with BH2 from the basement floor level, however, problems involving health and safety on the

site resulted in the drilling being suspended. Archaeological excavation took place instead, and the trenches scheduled for drilling were backfilled with gravel. The number of boreholes to be drilled was then reduced to three (BH3 in Trench 10, BH4 in Trench 12 and BH5 in Trench 11). Drilling took place from 12th to 14th October 2020 in order to sample the deep, unexcavated deposits.

- 1.3.3 The British Geological Survey (BGS1975, sheet 234; 2016) map the site as lying on the bedrock limestone and mudstone of the undifferentiated Blue Lias and Charmouth Mudstone Formations – strata that formed between 210 – 183 Ma in the late Triassic to Early Jurassic Epochs. The bedrock lithology is described as dark grey laminated shales with occasional sideritic nodules (BGS 2020a; 2020b). East of the site by c. 100m lies an extensive outcrop of Cheltenham Sand and Gravel that covers 2.5km² from Robinswood in the south of the city to Kingsholm in the north. The lithology of this unit is fine to medium sands with ooidal limestone stringers and it is believed to have been deposited in the middle of the Devensian cold stage (76,000 – 26,000ka) by aeolian and solifluction processes. It was derived from the Middle Jurassic Great Oolite and Inferior Oolite Groups on the Cotswold Escarpment. Evidence has been found that might relate to the Holt Heath Sand and Gravel Member terrace (see Section 3.2.2) that aggraded on the palaeo-Severn braid plain during the Wolstonian Stage (Barclay *et al* 1997, p90; Maddy and Lewis 2005, p79-80; BGS 2021,).



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Figure 1. Location of the site (red star) in the city of Gloucester.

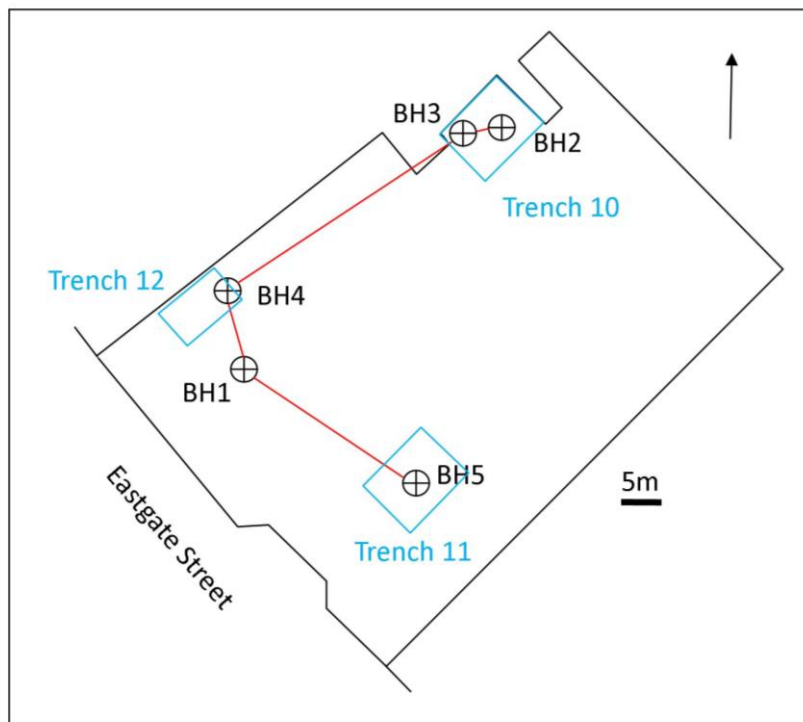


Figure 2. Outline plan of the former British Home Stores showing borehole locations and lithostratigraphic cross section in red (after Cliff Bateman pers. comm. 2021).

1.4 Aims

The aims of the work at the site were to:

- 1.4.1 Sample the Quaternary deposits preserved below the level of the base of the archaeological trenches;
- 1.4.2 Determine the date, state of preservation, and survival of any archaeological or palaeobiological remains;
- 1.4.3 Determine the nature and depositional environments of any Quaternary deposits preserved;
- 1.4.4 Assess the archaeological and palaeoenvironmental potential of the deposits.

2. METHODOLOGY

2.1 Field methodology and core logging

2.1.1 BH2 was drilled prior to excavation and located in Trench 10; BH3 was positioned on the backfill of Trench 10; BH4 on the backfill of Trench 12 and BH5 on the backfill of Trench 11 (

Figure 2).

2.1.2 Drilling commenced from the ground surface and continued until bedrock was reached. A Pioneer 2 drilling rig capable of both rotary and percussion drilling was used to retrieve continuous cores of 100mm diameter contained in Perspex liners (Geotechnical Engineering Ltd 2019). Boreholes were cased to ensure the minimum of contamination and the integrity of the borehole. The cores were sealed and labelled on site and transported to Geotechnical Engineering's Quedgeley warehouse for geoarchaeological logging.

2.1.3 The sediment retained in the core tubes was hand-cleaned using a sharp scalpel to expose a fresh surface for photography and description. Cores were photographed and the lithology was described using standard geological criteria (Jones *et al.* 1999; Munsell Color 2000; Tucker 2011).

2.2 Desk-top methodology

2.2.1 Lithological and positional data from the boreholes, including the geotechnical borehole (BH1), have been transcribed into a database of the RockWorks 15 geological utilities program (RockWare 2012). The software was then used to plot the lithostratigraphic cross-section. The location and elevation of the boreholes are recorded in Appendix 1 and lithological data in Appendix 2.

2.3 Palaeoenvironmental and dating assessment

No suitable organic material was recovered from the borehole cores and as a consequence no sampling for palaeoenvironmental work or dating was undertaken.

2.4 Archive

No cores have been selected for storage and no archaeological material was recovered. The digital archive consists of photographs of the cores in JPG format and this report in PDF format. These digital archives are stored both on the University of Winchester server and on an external hard drive stored outside the University of Winchester. Copies of these data can be supplied on request.

3. RESULTS: BOREHOLE LITHOLOGY

3.0.1 The sedimentary sequence found in the boreholes is divided into 4 stratigraphic units. These units are from youngest to oldest:

1. Made Ground: gravel backfill of Trenches 10, 11 and 12 (modern).
2. Archaeological Strata (Holocene).
3. Cheltenham Sand and Gravel (Pleistocene).
4. Blue Lias and Charmouth Mudstone Formation (Triassic: Lias Group bedrock).

Each unit is discussed in stratigraphic order in the following Sections.

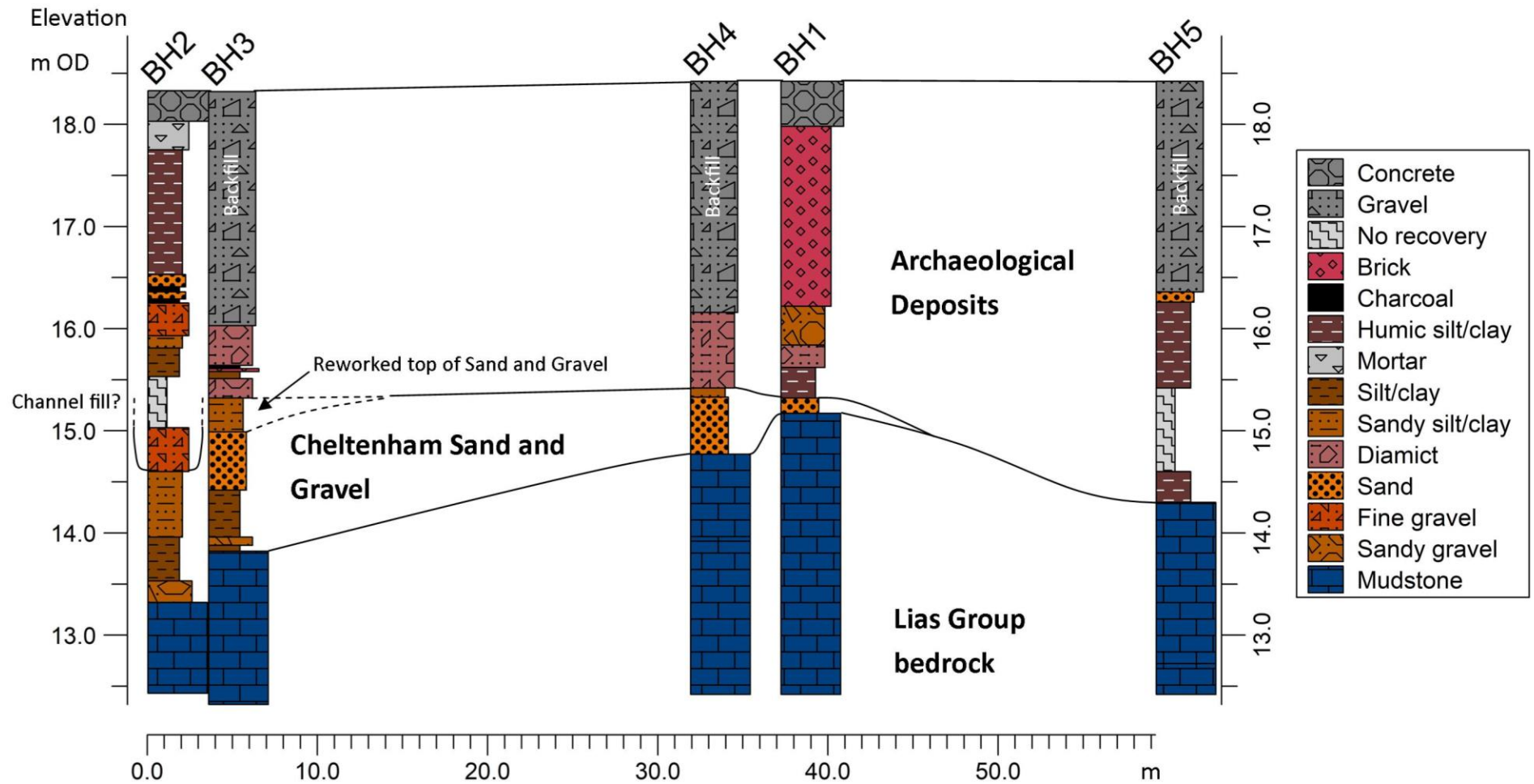


Figure 3. Lithostratigraphic cross section from north to south. Vertical exaggeration x6.

3.1 Lias Group bedrock

- 3.1.1 The Lias Group bedrock is found in all the boreholes (Figure 3). It lies between 13.32m OD (5.01m bgl) in BH2 in the north (Trench 10) and 15.17m OD (3.25m bgl) in BH1 in the southwest. In the south of the site the bedrock lies at 14.30m OD (4.12m bgl) (BH5, Trench 11).
- 3.1.2 The lithology of the bedrock is bluish grey (Gley 2 5/5B) grading into very dark bluish grey (Gley 2 3/5B), moist and stiff to indurate mudstone. It is homogenous with rare, granular-sized, greyish white, irregularly rounded nodules (diagenetic siderite) and exhibits a sub-parallel, shale-like lamination with a lustrous appearance. Cobble-sized (>64mm), greenish mottling is common towards the top of the unit and in BH3 60mm of greenish grey (Gley 1 5/1) silt/clay is preserved. These features are result of weathering during the Pleistocene.
- 3.1.3 The bedrock is unconformably overlain with sharp boundaries by superficial Quaternary deposits.

3.2 Cheltenham Sand and Gravel

- 3.2.1 Deposits mapped by the BGS as Cheltenham Sand and Gravel are found in BH1 – BH4 (Figure 3). The unit is composed of sandy gravels, sands, sandy silt/clays and silt/clays. It lies between 14.60m OD (3.73m bgl) in BH2 in the north and 15.44m OD (3.00m bgl) in BH4 in the west. The unit is not present in BH5 in the south and archaeological deposits lie directly on the bedrock. The thickest deposits are found in BH2 and BH3 in Trench 10 in the north where they attain 1.28m (BH2).
- 3.2.2 Thin deposits (c. 0.2m) of sandy gravels are only found in the north in BH2 and BH3. The deposits are brown (10YR 5/3) clast-supported, well-rounded fine- to coarse-sized (4 – 32mm) quartzite pebbles set in a matrix of moderately well-sorted medium sand with a silt/clay component. The quartzite lithology, the absence of ooidal limestone and the elevation suggest the deposit may be a remnant of the Holt Heath Sand and Gravel Member terrace. Overlying the gravels are finer grained deposits of primarily silt/clay lithology (BH2 and BH3) that suggest fluvial reworking of the mudstone bedrock under low energy conditions. A more dynamic fluvial environment succeeds with the deposition of sands and sandy silt/clays in

BH1 – BH4. Rare, coarse pebble clasts are found in the sand (e.g. BH3, Figure 4) that are most probably dropstones: coarse material trapped in ice rafts on rivers and deposited into fine sediment when the ice melts.

3.2.3 In BH2 the top of the unit (3.73m bgl) is a stiff, dryish, yellowish brown (10YR 5/4) sandy silt/clay that contains diffuse, cobble-sized patches of grey silt/clay and rare coarse to very coarse (16–64mm) pebble-sized ooidal limestone clasts (Figure 5). The heterogeneous lithology and particle-size suggests that the deposit was laid down via solifluction; a process of mass movement as a result of cycles of freeze/thaw under periglacial conditions. It is truncated by archaeological deposits.

3.2.4 In BH3 the top of the unit (3.00m bgl, 15.32m OD) is moist, firm light olive brown (2.5Y 5/3) very sandy silt/clay (Figure 3 and Figure 4). The sand is ooidal in lithology and granular-sized sub-rounded limestone clasts are present. The deposit is interpreted as a reworking of nearby Cheltenham Sand and Gravel (*sensu stricto*) strata. However, the overlying unit has a similar lithology but is much coarser: dark grey (2.5Y 4/1) coarse diamict, with granular- to cobble-sized angular ooidal limestone clasts set in a gritty silt/clay matrix and probably represents an archaeological deposit although no artefacts are present. The two units are contained within separate drilling cores – 3.00m marks the division between the cores and the units – which makes interpretation more challenging since the boundary is missing.¹ The two units may, in fact, be one-and-the-same and the reworking is via human action.

3.2.5 In BH4 the top 90mm of the yellowish brown sand is coloured grey (7.5YR 5/1) implying a humic content probably derived from overlying archaeological deposits.

3.2.6 The Cheltenham Sand and Gravel is overlain by archaeological deposits in BH1 – BH4.

¹ The top and base of drilling cores are possible points of contamination and/or loss of deposit. Interpretation across the core boundary needs to be carefully made especially when dealing with loose or wet sediments.



Figure 4. Deposits in BH3 at the boundary (15.32m OD) between the Cheltenham Sand and Gravel and the archaeological strata.

3.3 Archaeological strata

- 3.3.1 Archaeological deposits truncate the superficial geology in BH2 and truncate the mudstone bedrock in BH5 (Figure 5). In BH1 and BH4 they appear to be developed on top of the sand as may also be the case for the very coarse limestone diamict and underlying sandy silt/clay found in BH3 (see Section 3.2.4). The deposits in each borehole are discussed in the sections below.
- 3.3.2 In the north of the site in BH2, the superficial geology is truncated by a greyish brown (2.5Y 5/2) poorly sorted, fine gravel consisting of angular to sub-rounded ooidal limestone clasts of granular- to medium pebble-size (2–16mm). Frequent grains and granules of cbm are present too. The deposit appears to be fluviially worked and may represent a small channel bed (Figure 5). It is succeeded by a sequence of seven, relatively thin units (between 4mm and 320mm) with sharp boundaries that include comminuted charcoal, sand, gravel and clays (Figure 6). These units are not natural in origin nor do they appear to have been fluviially reworked. They represent deposits emplaced by human action; none appear to be characteristic of a permanent surface/floor level. The overlying unit at the top of the sequence is a thick (1.28m) very dark grey (10YR 3/1) to black (10YR 2/1) moist and firm silt/clay with an occasional clastic content. The clasts consist of fine to very coarse pebble-sized, angular ooidal limestone; greenish grey sandstone and red brick with associated pinkish mortar. The silt/clay matrix is friable and very humic although comminuted charcoal adds to the dark colour. The matrix contains rare cbm granules, occasional grains and granules of charcoal and coarse sand- to granular-sized ooidal limestone. Occasional, very fine white grains (ooids) are also present. The unit does not retain any features of an *in situ* soil (e.g. bioturbation, ped structure), and albeit the result of human action, its genesis remains unclear.
- 3.3.3 In BH5 in the south, the superficial geological deposits appear to have been removed entirely and the weathered mudstone truncated by a humic silt/clay emplaced by human action. The archaeological deposit (possibly context 1160) is thick (1.96m), very dark greyish brown (10YR 3/2) silt/clay tending to be structureless and wet. The texture is gritty from coarse sand- to granular-sized mineral grains and sub-angular ooidal limestone. Granular- to fine pebble-sized charcoal fragments are frequent and there are occasional grains of red cbm. There is a notable lack of clasts and the deposit is generally homogenous with no

ped structure but, on occasion and where it is drier, a friable prismatic structure is retained. A poorly defined cobble-sized lens of yellowish fine sand points to some reworking, however, the genesis of the unit as a whole is unclear.

3.3.4 The Cotswold Archaeology Ltd context sheet for Geotechnical BH1 in the southwest records a 0.3m thick, dark grey, silty, sandy clay lying over the superficial geology (Figure 3). It has been interpreted as a possible archaeological layer of trample. This unit is overlain by a unit, 0.22m thick, of dark grey silty clay, mortar and reddish stone. It is succeeded by a mid-red sandy gravel 0.38m thick. The final unit is 1.76m thick and composed of red brick and stone with sand and silt. It is interpreted as modern demolition levelling prior to the construction of the British Home Stores building.

3.3.5 In BH4 in the west, a single diamict unit lies between the superficial geology and the gravel backfill (Figure 3). It is a dark olive grey (5Y 3/2) sandy diamict that is moist, friable and soft. Frequent olive coloured (5Y 4/3) mottling suggests oxidation as a result of a fluctuating water table. The matrix has a very gritty texture with fine to coarse sand-sized mineral grains. Charcoal grains and granules, and fine pebble-sized fragments are present. Cbm grains are recorded too but are rare. Clasts consist of granule- to very coarse pebble-sized, sub-rounded ooidal limestone and rare sub-rounded medium pebble-sized flint. No evidence was found to date this deposit, however, it may equate to context 1226 in Trench 12 in which case it is modern in date (Cliff Bateman pers. comm. 2021).

3.3.6 In BH3 in the north, four units overly the diamict discussed in Section 3.2.4 (Figure 3 and Figure 4): a brown (7.5YR 5/4) silt/clay containing charcoal grains; an unevenly fired, crushed red brick of possibly Roman date; a thin, diffuse charcoal unit and finally a dark greyish brown (10YR 4/2) coarse and loose diamict, with a very sandy matrix and fine pebble- to cobble-sized (>64mm) ooidal limestone clasts. The deposits have generally sharp boundaries and in total are 0.52m thick; they probably represent demolition material.

3.4 Made Ground

3.4.1 Approximately 2m of modern gravel backfill overlies the archaeological deposits in BH3 – BH5. In BH1 and BH2 the concrete floor of the former British Home Stores building completes the Quaternary sequence.

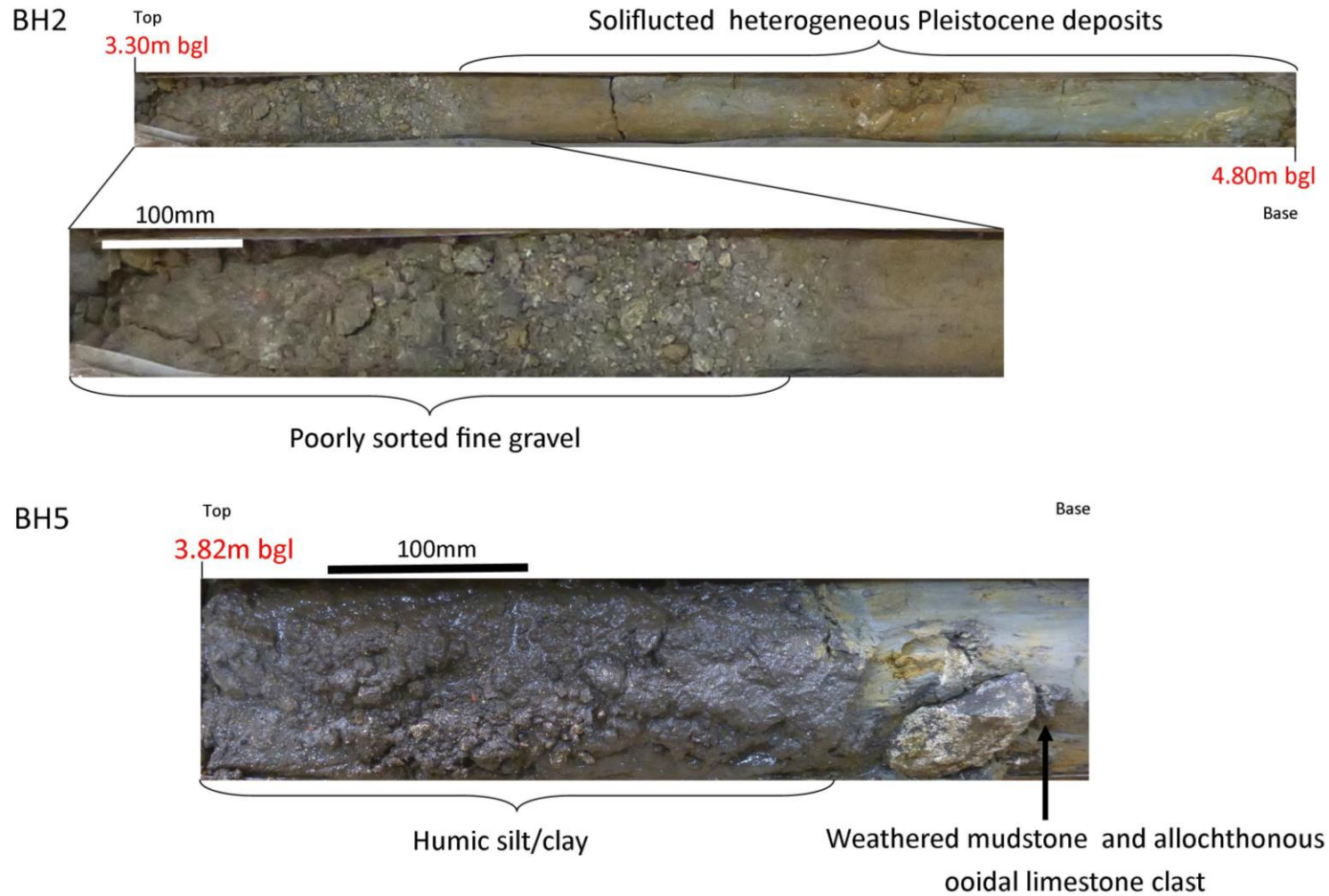


Figure 5. Contacts of the archaeological strata with the geology in BH2 and BH5 at 13.32mOD and 14.30m OD respectively.

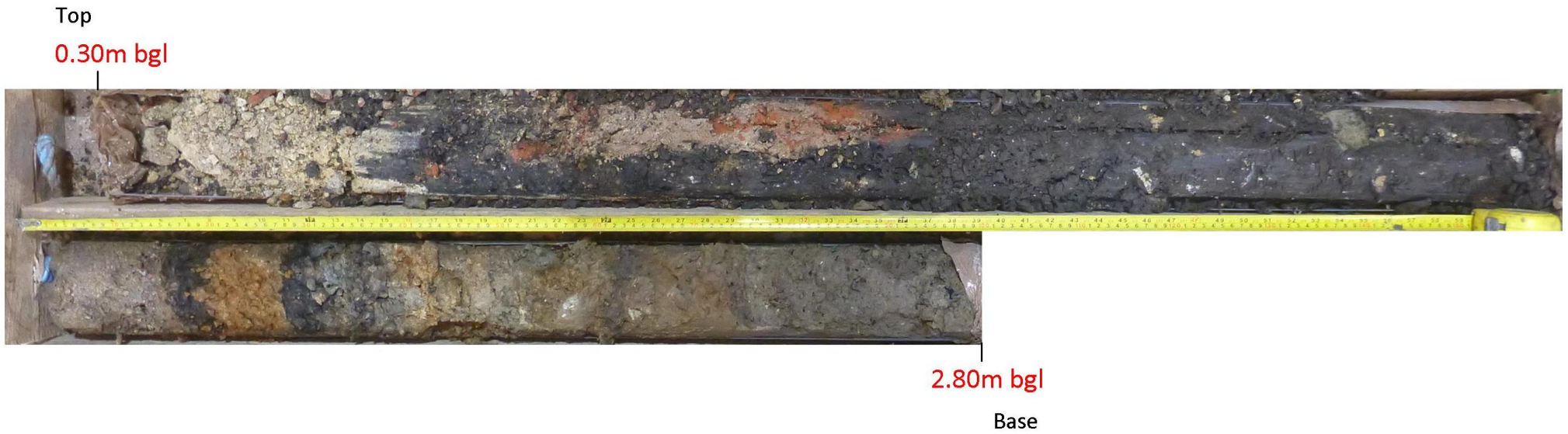


Figure 6. Archaeological strata in BH2 cores. The top core length is 1.5m.

4. ASSESSMENT

4.0.1 The sub-sections below review the lithostratigraphic evidence against the relevant aims of Section 1.4.

4.1 Lithostratigraphic sequence

4.1.1 On the site the weathered Lias Goup mudstone forms an eroded basement to superficial geological deposits mapped as the Cheltenham Sand and Gravel. The elevation of the mudstone is highest in the southwest (15.17m OD) falling by c. 1.5m towards the north and south. Complex superficial geological deposits are recorded in all the boreholes except BH5 where they are truncated by an archaeological stratum. The superficial geology presents possible evidence for the Holt Heath Sand and Gravel Member terrace in the form of quartzitic sandy gravels in BH2 and BH3. Reworking of mudstone clays, which includes coarse material interpreted as ice-rafted dropstones, is evidence of erosion and deposition under periglacial conditions at the end of the Devensian Stage. Ooidal limestone clasts, characteristic of the Cheltenham Sand and Gravel, are found only at the very top of the superficial geology and represent reworking possibly via human action (BH3).

4.1.2 Archaeological deposits are developed in all the boreholes. In BH5 in the south, a single, thick and relatively homogeneous, humic archaeological deposit (context 1160) truncates the mudstone. In the west in BH4, a single stratum (context 1226) is recorded that, by comparison with the contexts recorded in the excavation of Trench 12, is believed to be modern. In the north of the site a fill of a possible minor channel (BH2) that contains grains of cbm truncates the superficial geology. Otherwise archaeological strata are heterogeneous in material content and varied in thickness, and may represent layers of demolition (BH1, BH2 and BH3). A possible Roman brick is found in BH3 but aside from grains of cbm, no other artefact or ecofact is recorded. Waterlogged organic material is not present.

5. CONCLUSIONS

5.1 The following conclusions are drawn from the borehole evidence on the site:

- The Lias Group bedrock lies between 13.32m OD (5.01m bgl) in BH2 in the north and 15.17m OD (3.25m bgl) in BH1 in the southwest.
- Superficial geological deposits mapped as the Cheltenham Sand and Gravel are found in all the boreholes except BH5.
- The superficial gravel deposits may represent remnants of the Holt Heath Sand and Gravel Member terrace on account of the presence of quartzitic gravels (BH2 and BH3), the absence ooidal limestone clasts and an elevation of c. 13.5m OD.
- Intense weathering during the end of the Pleistocene has created a heterogeneous assemblage of freshwater and periglacial deposits that developed over the top of and from the weathering of the bedrock. The superficial geology attains 1.28m in thickness.
- Archaeological deposits truncate the bedrock in BH5 and truncate the superficial geology in BH2 where a fill of a possible channel is found.
- In BH1, BH2, and BH3 archaeological deposits are varied in thickness and lithology, and may represent demolition layers.
- Other than fragments of a possible Roman brick (BH3), no archaeological or palaeoenvironmental material was recorded.
- There is no palaeoenvironmental potential in the core deposits. The archaeological potential is low.

6. ACKNOWLEDGEMENTS

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APPENDIX 1: BOREHOLE LOCATIONS

Borehole	Easting	Northing	Elevation m
BH1	383264.4176	218479.3543	18.42
BH2	383289.6588	218500.7538	18.33
BH3	383286.1455	218500.177	18.32
BH4	383262.6459	218484.3575	18.42
BH5	383281.6017	218465.5358	18.42

APPENDIX 2: BOREHOLE LITHOLOGY

Borehole	Top m	Base m	Lithology	Description
<i>Cotswold Archaeology Ltd log</i>				
BH1	0.00	0.44	Concrete	<i>Concrete floor</i>
BH1	0.44	2.20	Brick	<i>Mixed red brick demo and stone crush. Large quantities of associated sand and silt. Likely demo levelling for BHS.</i>
BH1	2.20	2.58	Sandy gravel	<i>Mid red sandy gravel. Type I material.</i>
BH1	2.58	2.80	Diamict	<i>Mixed stone and reddish stone, mixed with dark grey silty clay and mortar. Core change here so likely contam from above.</i>
BH1	2.80	3.10	Humic silt/clay	<i>Dark grey silty sandy clay. Poss surviving Arch layer. Humic material/trample on Nat horizon.</i>
BH1	3.10	3.25	Sand	<i>Mid brownish yellow sand. Natural pure sand overlying the Lias.</i>

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BH1	3.25	6.00	Mudstone	<i>Blue grey Lias clay. (BH end at 12m)</i>
ARCA logs				
BH2	0.00	0.30	Concrete	Concrete floor.
BH2	0.30	0.58	Mortar	10YR 8/2 Very pale brown mortar; dry, friable and loose.
BH2	0.58	1.80	Humic silt/clay	10YR 3/1 Very dark grey to 10YR 2/1 Black silt/clay, moist and firm. Occasional to frequent fine to coarse pebble-sized clasts of angular eroded ooidal limestone; greenish grey sandstone and red brick with associated pinkish mortar. Matrix is a very humic silt/clay (comminuted charcoal adds to dark colour). Rare cbm granules and occasional grains and granules of charcoal. Friable texture. Occasional very fine white grains (oids). Occasional coarse sand- to granular-sized ooidal limestone. General homogeneity except for brick and mortar clasts.
BH2	1.80	1.92	Sand	2.5Y 5/2 Greyish brown very poorly sorted sand; moist and friable. Occasional cbm granule; frequent granules of ooidal limestone. Occasional well-rounded fine pebble of quartzite. (Construction material). Sharp boundary to:
BH2	1.92	1.97	Charcoal	10YR 2/1 Black silt/clay moist and friable. Comminuted charcoal. Sharp boundary to:
BH2	1.97	2.04	Sand	10 YR 5/8 Yellowish brown gravelly sand; moist and friable. Granular to medium pebbles of ooidal limestone. (Construction material). Sharp boundary to:
BH2	2.04	2.08	Charcoal	10YR 2/1 Black silt/clay moist and friable. Comminuted charcoal. Sharp boundary to:
BH2	2.08	2.40	Fine gravel	2.5Y 5/3 Light olive brown and 5/1 Grey matrix-supported gravel; moist and firm. Banded colouration. Very sandy silt/clay matrix. Clasts of granular to fine pebble-sized angular to sub-rounded ooidal limestone and rare grey mudstone.
BH2	2.40	2.52	Sandy silt/clay	2.5Y 5/3 Light olive brown sandy silt/clay; moist and firm. Sharp boundary to:
BH2	2.52	2.80	Silt/clay	5Y 5/2 Olive grey silt/clay; moist and firm. Frequent sand-sized mineral grains and charcoal grains evenly distributed. Occasional ooidal limestone grains and granules. Homogeneous unit.
BH2	2.80	3.30	No recovery	Void.

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BH2	3.30	3.73	Fine gravel	2.5Y 5/2 Greyish brown very poorly sorted fine gravel; dry and friable. Clasts of angular to sub-rounded ooidal limestone granular to medium pebble-sized. Frequent grains and granules of cbm. 20% silt/clay fraction. (Channel deposit). Diffuse boundary to:
BH2	3.73	4.37	Sandy silt/clay	10YR 5/4 Yellowish brown sandy silt/clay; dryish and stiff. Diffuse cobble-sized patches of grey silt/clay and rare coarse to very coarse pebble-sized ooidal limestone clasts. (Cheltenham Sand and Gravel reworked with weathered mudstone). Diffuse boundary to:
BH2	4.37	4.80	Silt/clay	10YR 5/1 Grey silt/clay; dryish and stiff. (Weathered, reworked mudstone)
BH2	4.80	5.01	Sandy gravel	10YR 5/3 Brown sandy gravel; dryish and firm. Clast-supported well-rounded fine to coarse-sized quartzite pebbles. Matrix of moderately well sorted medium sand with a silt/clay component. (Terrace). Sharp boundary to:
BH2	5.01	5.90	Mudstone	Gley 2 5/5B Bluish grey grading into Gley 2 3/5B Very dark bluish grey silt/clay, moist and stiff mudstone. Homogenous with rare granular-sized greyish white irregular rounded nodules (siderite). Greenish (5Y 4/3 Olive) very coarse pebble-sized, ill-defined mottling. Sub-parallel, shale-like laminae at base. (Blue Lias Formation and Charmouth Mudstone Formation (Undifferentiated)). End of BH.
BH3	0.00	2.29	Gravel	Backfill
BH3	2.29	2.68	Diamict	10YR 4/2 Dark greyish brown coarse diamict, moist and loose. Fine pebble- to cobble-sized ooidal limestone. Very sandy matrix. (Construction/demolition material). Diffuse boundary to:
BH3	2.68	2.71	Charcoal	10 YR 2/1 Black charcoal grains and granules. (Construction/demolition material). Sharp boundary to:
BH3	2.71	2.74	Brick	Red brick cobble fills core: uneven firing crushed <i>in situ</i> ? (Roman?). Sharp boundary to:
BH3	2.74	2.81	Silt/clay	7.5YR 5/4 Brown silt/clay, moist and firm. Charcoal grains at top. (Construction/demolition material). Sharp boundary to:
BH3	2.81	3.00	Diamict	2.5Y 4/1 dark grey coarse diamict, wet and loose. Granular to cobble-sized angular ooidal limestone clasts. Silt/clay matrix with gritty texture from frequent grains and granules of limestone. (Construction/demolition material).

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BH3	3.00	3.33	Sandy silt/clay	2.5Y 5/3 Light olive brown very sandy silt/clay, moist and firm. Frequent ooids and granular -sized, sub-rounded limestone at top. Soft and wet at base. (Fluvially reworked top of Cheltenham Sand and Gravel) Diffuse boundary to:
BH3	3.33	3.90	Sand	10 YR 5/6 Yellowish brown sand, moist and firm. Well sorted, fine to medium quartz sand. Rare coarse pebble sized well-rounded quartzite (drop stone) (Terrace?). Sharp boundary to:
BH3	3.90	4.36	Silt/clay	Gley 1 5/1 Greenish grey silt/clay, moist and firm. Rare white granular-sized nodules (siderite?) (Weathered and reworked mudstone/Pleistocene alluvium)
BH3	4.36	4.44	Sandy gravel	10 YR 5/6 Yellowish brown sandy gravel, moist and firm. Well-sorted fine to medium quartz sand. Granular to medium pebbles of well-rounded quartzite. (Terrace?). Sharp boundary to:
BH3	4.44	4.50	Silt/clay	Gley 1 5/1 Greenish grey silt/clay, moist and firm. Rare white granular-sized nodules (siderite?) (Weathered and reworked mudstone/Pleistocene alluvium)
BH3	4.50	6.00	Mudstone	Gley 2 5/5B Bluish grey grading into Gley 2 3/5B Very dark bluish grey, moist and stiff mudstone. Homogenous with rare granular-sized greyish white irregular rounded nodules (siderite). Greenish cobble-sized well delineated mottling. Sub-parallel, shale-like laminae and lustrous appearance at base. (Blue Lias Formation and Charmouth Mudstone Formation (Undifferentiated)). End of BH.
BH4	0.00	2.26	Gravel	Back fill
BH4	2.26	3.00	Diamict	5Y 3/2 Dark olive grey sandy diamict, moist friable and soft. Frequent 5Y 4/3 olive mottling. Matrix has a very gritty texture with fine to coarse sand-sized mineral grains. Occasional to frequent charcoal grains and granules and fine pebble-sized fragments. Occasional to frequent, granule to very coarse pebble-sized ooidal limestone, sub-rounded. Rare sub-rounded medium pebble-sized flint. Rare cbm grains. (Archaeological).
BH4	3.00	3.09	Sandy silt/clay	7.5YR 5/1 Grey sandy silt/clay, moist and firm. (Top of superficial Pleistocene deposits). Gradual boundary to :

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BH4	3.09	3.65	Sand	2.5Y 6/6 Olive yellow sand, moist and firm. Moderately well-sorted medium sand. 45% silt/clay imparts colour. Rare, well-rounded, medium pebble of grey sandstone. (Terrace?). Very sharp irregular boundary to:
BH4	3.65	4.50	Mudstone	Gley 2 5/5B Bluish grey grading into Gley 2 3/5B Very dark bluish grey, moist and stiff mudstone. Homogenous with rare granular-sized greyish white irregular rounded nodules (siderite). Greenish cobble-sized well delineated mottling 50%. (Weathered Blue Lias Formation and Charmouth Mudstone Formation (Undifferentiated)). End of BH.
BH4	4.50	6.00	Mudstone	Gley 2 3/5B Very dark bluish grey silt/clay, moist and stiff to indurate mudstone. Homogenous with rare granular-sized greyish white irregular rounded nodules (siderite). Sub-parallel, shale-like laminae and lustrous appearance towards base. (Blue Lias Formation and Charmouth Mudstone Formation (Undifferentiated)). End of BH.
BH5	0.00	2.06	Gravel	Back fill
BH5	2.06	2.16	Sand	10YR 5/8 Dark yellowish brown sand, moist and loose. Well sorted medium sand with rare fine pebble-sized well-rounded quartzites (Redeposited Terrace: construction material).
BH5	2.16	3.00	Humic silt/clay	10YR 3/2 Very dark greyish brown humic silt/clay, moist and soft and often very wet. Very gritty texture from coarse sand to granular-sized mineral grains. Poorly defined cobble-sized lens of yellowish fine sand. Frequent granular to fine pebble-sized charcoal fragments. Rare fine pebble-sized eroded and sub-angular ooidal limestone. Notable lack of clasts, generally homogenous. No ped structure but retains a friable prismatic structure. Generally structureless due to high water content. Rare mottling indicative of oxidation. (Possible soil?).
BH5	3.00	3.82	No recovery	Void (loss of loose wet material?)
BH5	3.82	4.12	Humic silt/clay	as above 2.16-3.0m but wet and loose with occasional cbm grains. Coarse pebble of angular, weathered ooidal limestone. Sharp boundary to:
BH5	4.12	5.70	Mudstone	Gley 2 5/5B Bluish grey grading into Gley 2 3/5B Very dark bluish grey, moist and stiff mudstone. Homogenous with rare granular-sized greyish white irregular rounded nodules (siderite). Greenish cobble-sized well delineated mottling. Sub-parallel, shale-like laminae and lustrous appearance at base. (Blue Lias Formation and Charmouth Mudstone

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				Formation (Undifferentiated)). End of BH.
BH5	5.70	6.00	Mudstone	Gley 2 5/5B Bluish grey grading into Gley 2 3/5B Very dark bluish grey silt/clay, moist and stiff to indurate mudstone. Homogenous with rare granular-sized greyish white irregular rounded nodules (siderite). Sub-parallel, shale-like laminae and lustrous appearance towards base. (Blue Lias Formation and Charmouth Mudstone Formation (Undifferentiated)). End of BH.