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WATERLOO CAR PARK: GEOARCHAEOLOGICAL REPORT

Prepared for Cotswold Archaeology Ltd

by
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SUMMARY

In March 2019, ARCA, at the request of Cotswold Archaeology Ltd, recorded three hand-excavated trenches in which boreholes were then drilled by cable percussion at the Waterloo Car Park, Cirencester, Gloucestershire (trench-BH1 – trench-BH3). In 1998 six test pits (TP1 – TP6) had revealed the presence of a Roman wall; occupation levels of Roman, medieval and post-medieval date; and 'alluvial clays' lying over the gravels of the First Terrace Deposits of the River Churn. The data from both archaeological interventions are combined in this report.

The gravels were found to lie between 104.94m OD in TP5 and 106.89m OD in trench-BH1. In trench-BH1, 0.9m of a dark cultural diamict possibly Roman in date, overlies the gravels and is truncated by Made Ground. In trench-BH2, on the terrace edge, the gravels are overlain by a thick and oxidised cultural diamict, which is evidence of occupation (possibly Roman) of the floodplain. This deposit is overlain by a high level flood deposit of reduced silt/clay lacking any evidence of occupation and is posited to be post-Roman in date. The stratum is truncated by Made Ground. In trench-BH3, the gravels are overlain by a sequence of construction levels for a cobbled surface. This surface is overlain by fine diamicts containing abundant granules of possibly Roman cbm.

No organic strata were recovered and the deposits exist within the vadose zone of the nearby River Churn.

1. INTRODUCTION

1.1 This report discusses the results of a geoarchaeological investigation of three archaeological trenches and subsequent borehole coring that took place in the Waterloo Car Park, Cirencester, Gloucestershire (henceforth 'the site'). Of particular interest was the possible presence of peat within the superficial sedimentary stratigraphy. The work was carried out by ARCA on behalf of Cotswold Archaeology Ltd from 18th to 20th March 2019.

1.2 The site is centred on National Grid Reference (NGR) 402644 202057. It is an open air car park covering *c.* 0.58ha and lies on flat ground of the River Churn floodplain in the north east of Cirencester. The elevation is *c.* 108.5m OD.

1.3 The British Geological Survey (BGS) map (sheet 235, 1:50,000 1998) the bedrock geology of the site as the Forest Marble Formation of the Middle Jurassic Epoch. It is a grey silicate mudstone and is unconformably overlain by Quaternary deposits mapped as the First Terrace Deposits of the River Churn. The lithology of this terrace is described as limestone gravel (British Geological Survey 2019a; 2019b).

1.4 The site is bound 160m to the northeast by two parallel channels of the River Churn with remains of the Roman City wall lying between them. The river rises *c.* 17km to the north in the Cotswolds, south of Cheltenham, and drains formations of the Great Oolite Group that comprise mudstones and ooidal, bioclastic limestones; the latter forming the basal gravels on the site. Immediately north of the town the river valley is *c.* 100m wide, it then widens to *c.* 800m just south of the site. The river itself has an anastomosing planform and shallow depth and is culverted on its passage through the town. It is reported to dry out; in 2011 the river bed at Latton, *c.* 9km south of Cirencester, prior to its confluence with the Thames, was dry. Although this report cannot be confirmed (the Thames source at Trewsbury Mead dried in the same year) it is of significance for the possible presence and state of preservation of any peat resource that may exist on the site. Peat is not mapped in the Cirencester area by the BGS.

1.5 The aims of the work at the site were (Cotswold Archaeology 2019, 6):

1.5.1 Characterise the sedimentary sequence;

1.5.2 Assess the palaeoenvironmental potential of deposits, including the potential for surviving waterlogged remains within the site;

1.5.3 Determine the absolute age of the organic strata;

1.5.4 Make recommendations for further investigation of the stratigraphy at later project stages.

2. METHODOLOGY

2.1 Trench excavation/borehole drilling

2.1.1 Locations for trenches (trench-BH#) were selected by Cotswold Archaeology (Figure 1). The trenches were first excavated by hand *c.* 1 x 1m to 1.2m in depth according to strictures applicable to the Scheduled Monument (Historic England, ref. 1003426) (Cotswold Archaeology 2019, 5 – 9). At a depth of 1.2m a section of each trench was logged and photographed according to standard criteria (Jones *et al.* 1999; Munsell Color 2000; Tucker 2011). To advance the investigation, the base of each trench was hand augered using an Edleman auger to prove the gravel terrace deposits and the arisings were recorded. Geotechnical borehole drilling organised by Nicholls Colton Group Ltd and using the cable percussive method was then completed through the backfilled trenches to the rockhead. Follow on rotary drilling sampled the bedrock strata. Locational data and lithological descriptions are listed in the appendices.

2.1.2 In 1998 six test pits (TP#) were excavated on the site (Figure 1) (Cotswold Archaeology 1998). The results of these excavations have been included in this report and two lithostratigraphic cross-sections (Figure 2 and Figure 3) and a map of the structural elevation of the gravel terrace surface (Figure 4). The latter has been constructed in RockWorks employing an inverse distance algorithm which created an 'area of influence' for each test pit and trench-borehole. To do this, within the area of the RockWorks' project dimensions (approximately equal to the area of the site) each borehole is plotted surrounded by the predicted area of Quaternary gravel. To avoid over extrapolating data to areas where there is none (areas where no boreholes were drilled), a limit of 15% of the project dimensions is set per borehole (a diameter of *c.* 40m centred at each location), and the values of the surrounding grid nodes are then recorded as zero.

2.2 Archive

2.2.1 There is no material archive and no artefacts were recovered. The digital archive consists of photographs of the sections 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.

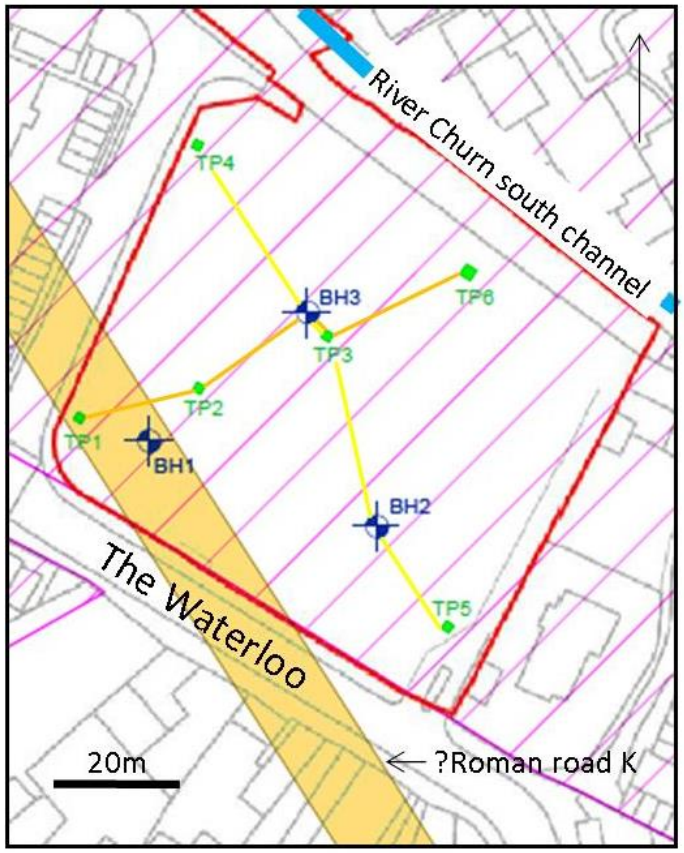

Figure 1. Locations of the test pits (TP#) dug in 1998 and the 2019 trench-boreholes (BH#) on the Waterloo car park site. Scheduled monument in purple. Cross-sections in orange and yellow. (After Cotswold Archaeology Ltd)

3. RESULTS: LITHOLOGICAL STRATIGRAPHY

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

1. Made Ground (late 20th century car park construction of gravels and tarmacadam)
2. Fine grained alluvium I (high level ?post-Roman floodplain silt/clays)

3. Archaeological strata (?Roman cultural diamicts and structural deposits)
4. Fine grained alluvium II (Holocene 'alluvial clay')
5. First Terrace Deposits (Late Devensian fluvial gravels and sands).

These units are described in stratigraphic order below.

3.1 First Terrace Deposits

3.1.1 The gravels of the First Terrace Deposits lie between 104.94m OD in TP5 and 106.89m OD in trench-BH1. The surface topography is irregular, and in TP1 and TP5 the gravels occupy a markedly low elevation between *c.* 0.7 and 1.1m below the average elevation (106.07m) (Figure 4). In the case of TP5 this is expected as it lies towards the south eastern edge of the terrace. TP1 on the other hand, lies further west, and in the absence of other evidence must be regarded as a natural trough in the terrace surface. Geotechnical drilling determined the thickness of the gravel to be between 3.36m in trench-BH3 and 6.55m in trench-BH1. It lies on limestone bedrock of the Jurassic Cornbrash Formation.[1]

3.1.2 The gravel lithology is a yellowish brown (10YR 5/4) clast supported granular to medium gravel of well-rounded, ooidal limestone clasts with a primarily oblate[2] and equant shape. Sand and muds are subordinate.

3.1.3 The gravels of the First Terrace are overlain by fine grained alluvium ('alluvial clay') in TP1, TP3 – TP6; 'dark earth' in trench-BH1; oxidised cultural silt/clays in trench-BH2 and presumed Roman structural deposits in trench-BH3.

[1] The site lies on the boundary of two Jurassic formations and although the bedrock is mapped as the Forest Marble Formation the younger Cornbrash Formation sub-crops first in the boreholes below the terrace gravels.

[2] Oblate refers to a platy slab-like shaped clast.

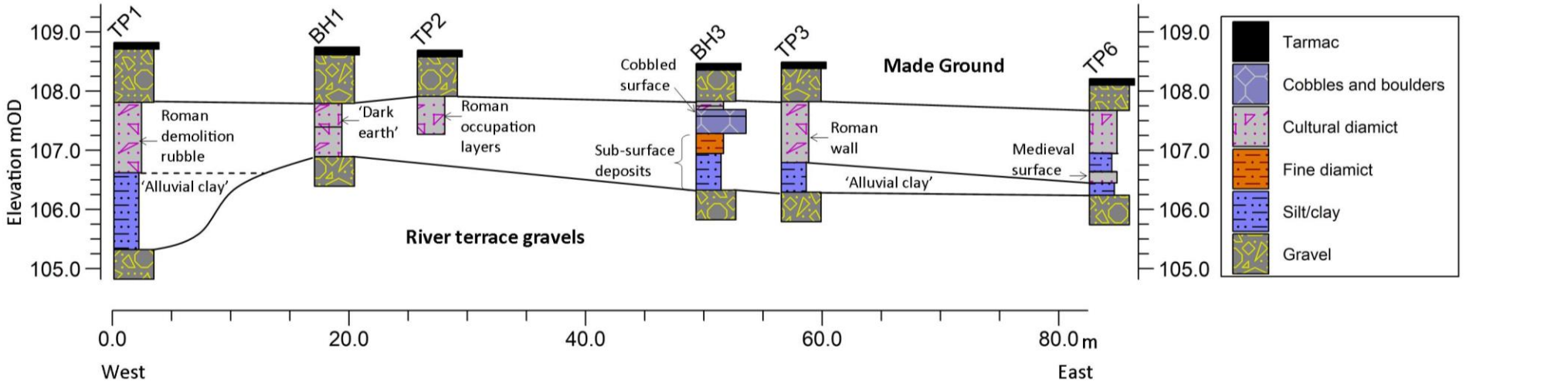

Figure 2. Lithostratigraphic cross-section west to east. Vertical exaggeration x5.

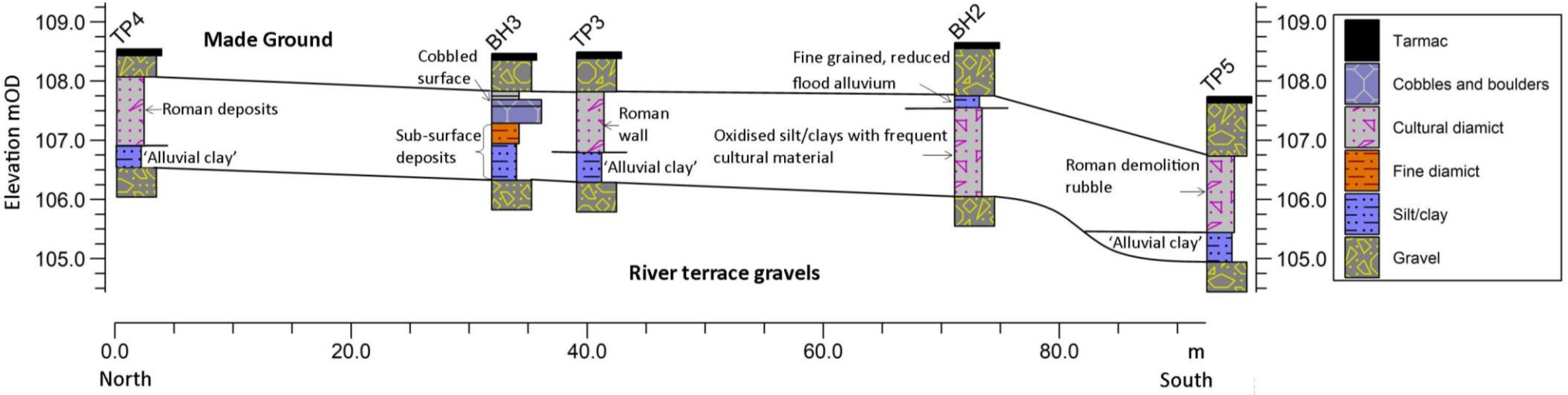

Figure 3. Lithostratigraphic cross-section north to south. Vertical exaggeration x5.

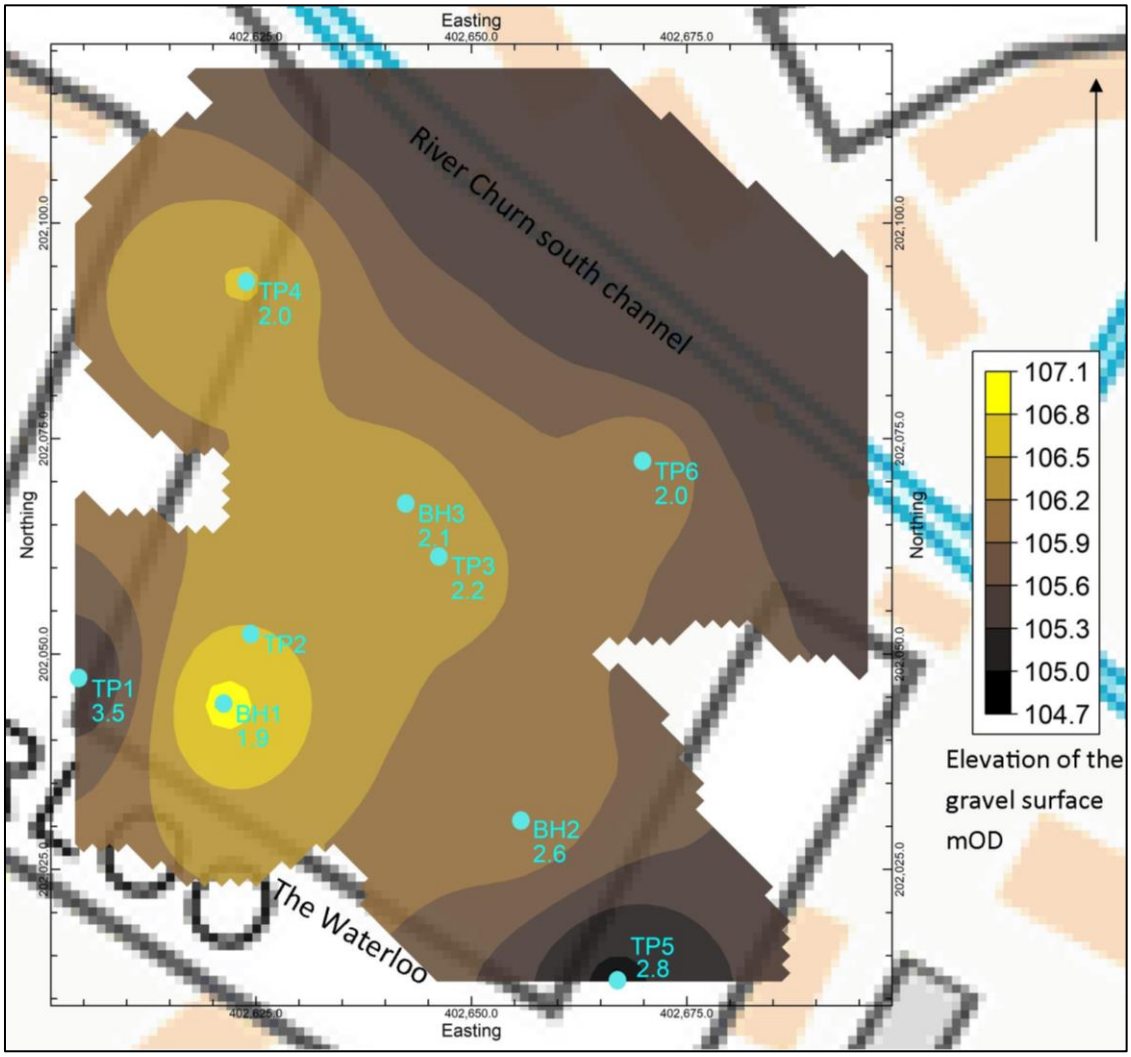

Figure 4. Map of the elevation above Ordnance Datum of the gravel surface of the First Terrace Deposits. Depths (m) below ground level are posted beside each location.

3.2 Fine grained alluvium II

3.2.1 In 1998 the excavators recorded 'alluvial clay' and 'alluvial layer' –interpreted here as fine grained alluvium. This is found directly over the gravels in TP1, TP3, TP5 and TP6; and in association with archaeological deposits in TP4 and TP6 (Cotswold Archaeology 1998, 30-32).

3.2.2 'Alluvial clay' overlying the gravels is described in TP1, TP3 and TP5, and it sub-crops between 106.79m OD in TP3 and 105.44m OD in TP5. It lies in troughs on the gravel surface and is a maximum of 1.3m thick in TP1 where the gravels are

particularly low. There is no description of the clay. It is recorded in excavation in TP6 overlying the gravels and overlain by a medieval surface (610). The lithology is described as, 'Alluvial layer [(613)], medium blue-grey silty clay with infrequent inclusions of small, rounded limestone pebbles and small fragments of wood … 0.16m thick'. It is overlain by (612), 'Alluvial layer, light to medium yellow-brown silty clay, very humic with frequent inclusions of wood fragments and leaves, covered by (610), 0.05m thick' (Cotswold Archaeology 1998, 30-31). The lower unit appears to be reduced and the upper unit oxidised even though the upper unit is recorded as humic with wood and leaves: oxidation would be expected to have to destroyed organic material.

3.2.3 In two test pits (TP4 and TP6) 'Alluvial clay' is recorded as having been deposited during periods of occupation. In TP4, where it overlies and is cut by Roman features, it is described as 'grey-brown silty clay' (presumably an oxidised unit). In TP6 it overlies the medieval surface mentioned above and is described as, 'Alluvial layer [(609)], medium blue-grey silty clay with infrequent inclusions of small, rounded limestone pebbles and small fragments of wood,…, 0.23m thick'. It is overlain by, 'Alluvial layer, light to medium yellow-brown silty clay, very humic with frequent inclusions of wood fragments and leaves, covered by (611), 0.11m thick' (Cotswold Archaeology 1998, 31). Here again, there is the unusual occurrence of plant remains in what appears to be an oxidised upper unit.

3.2.4 TP6 is the only location that records organic detrital remains on the site. The test pit is located close to the south channel of the River Churn.

3.3 Archaeological strata

3.3.1 Roman occupation deposits are found in TP1 – TP5; and medieval deposits in TP6 (for details see Cotswold Archaeology 1998). In the 2019 trenches (trench-BH1 – trench-BH3) presumed Roman deposits, described as cultural diamicts,[3] were recorded as lying over the gravels.

3.3.2 In trench-BH1, located on a gravel high in the southwest of the site, a black (2.5Y 2.5/1) silt/clay with occasional granular-sized fragments of reddish orange ceramic building material

[3] A cultural diamict is a deposit comprising a silt- and clay-sized matrix that contains granular- to cobble-sized clasts often of human origin.

(cbm) forms a thick (*c.* 0.9m) deposit over the gravels. Shell fragments and limestone clasts are present too. No bioturbation or any visible plant remains were noted. The unit lies in the vadose zone and is subject to fluctuating water levels and consequent oxidation. Dark orange iron oxide mottles are visible but partly masked by the black colour of the deposit. In the context of the Roman town the unit might be termed a 'dark earth', although there were no underlying Roman structural deposits that would characterise the definition.

3.3.3 In trench-BH2, located in the south east of the site, an oxidised greyish brown (10 YR 4/2) fine cultural diamict overlies the gravels. The deposit is predominantly a fluvial silt/clay and contains frequent grains and granules of cbm and charcoal. Occasional clasts of medium pebble-sized angular, oblate, iron oxide stained limestone are present also. It is 1.5m thick. Vertical earthworm burrows or root holes are encrusted with iron oxide deposits and derive from the overlying fine grained alluvium I (see Section 3.4).

Figure 5. Photographs of trench-BH2. 1) Surface of fine cultural diamict overlain by flood alluvium I. 2) Trench and auger hole prior to drilling BH2. 3) Auger core to the top of the gravels.

3.3.4 In trench-BH3 a sequence of mineralogical deposits overlies the terrace gravels (Figure 6 and Figure 7). The basal unit is a brown (7.5YR 4/4), stiff and heavily oxidised silt/clay. It grades into a softer, homogenised unit and the two units together may represent a deliberate deposit. The upper unit being a trample layer. Boulder-sized, blocky whitish limestone clasts have then been laid onto the upper unit with their long axes vertical and in point-contact with each other. This boulder deposit is then overlain by cobble-sized, blocky and grey bioclastic limestone also in point-contact and is believed to represent a ?Roman surface. The limestone forming the two clastic units has been deliberately selected for lithological properties which, in the field, are reflected in their colour and size. A very fine dark yellowish brown (10 YR 3/4) clayey gravel of sub-angular cbm

and occasional granules of limestone forms a thin and irregular unit (*c.* 0.06m) within the interstices of the cobbles and across their upper surface. Finally, this deposit is overlain with a sharp boundary by a very dark grey (2.5Y 3/1), silt/clay, composed of coarse sand- to fine pebble-sized limestone clasts and occasional grain- to coarse pebble-sized cbm. Very rare granular-sized plant fragments and charcoal is also present. In lithology and elevation the unit resembles the cultural diamict prevalent in trench-BH1 30m to the south west.

Figure 6. Northwest section trench-BH3 prior to augering and drilling. Cobbled surface overlain by two cultural diamicts; the lower characterised by red cbm granules. Yellow sandy gravel (Made Ground) truncates the upper dark grey diamict.

Figure 7. Continuous auger cores through the base of trench-BH3. From left to right: a homogenised 'trample' unit; a heterogeneous oxidised clay unit; sandy and clayey terrace gravels.

3.4 Fine grained alluvium I

3.4.1 Trench-BH2 preserves a unique stratum of high level alluvium lying at 107.7m OD. It overlies a ?Roman cultural diamict with a sharp boundary and is truncated by the gravels of the Made Ground. The deposit is 0.3m thick and homogeneous, dark grey (5Y 4/1) silt/clay with very rare charcoal grains and fresh water and terrestrial shell fragments. It represents a reduced alluvial unit laid down in slack water as flood water regressed. It is bioturbated by earthworm/root holes that are heavily oxidised (the same that are seen in the underlying unit (Section 3.3.3)) and suggests that the deposit has lain undisturbed. Since the unit is truncated it is difficult to assess the timescale involved; it probably represents decades of undisturbed deposition.

3.4.2 The fine grained alluvium I and the archaeological strata are overlain by modern Made Ground in all the trench-boreholes and test pits.

3.5 Made Ground

3.5.1 A massive, yellow sandy gravel of predominantly oblate, granular to medium pebble-sized limestone clasts truncates the deposits in all the trench-boreholes and test pits. It is overlain by tarmacadam. The combined thickness of both units across the site is between 1.02m and 0.53m in TP1 and TP6 respectively.

4 ASSESSMENT

4.0.1 The sub-sections below review the lithostratigraphic evidence against the relevant aims of Section 1.5.

4.1 Lithostratigraphic sequence

4.1.1 The trench-boreholes and the 1998 test pits all lie on the gravels of the First Terrace Deposits of the River Churn. These basal superficial deposits were laid down on the braid plain under conditions of cold and high energy in the Late Devensian stage. The terrace extends below much of the town of Cirencester elevating it above the floodplain which is formed of weathered Forest Marble mudstone. The bedrock is recorded at high elevation (*c.* 1m bgl) in trial pits and boreholes (e.g. BGSP008W152–157 at the London Road roundabout *c.* 250 m west, and on the left bank of the River Churn on the approach roads (A435 and A429) to the roundabout. No gravel is recorded.

4.1.2 At the end of the Pleistocene, climatic amelioration brought about a stabilisation of the land surface and an end to channel gravel aggradation. Colonisation by plants reduced the supply of sediment and stream flow energy fell as a result of milder winters and the shift from surface to ground water drainage succeeding the melting of the permafrost. Low energy silt/clays aggrade across the flood plain and occupy troughs within the First Terrace Deposits as is seen in TP1 and TP3 – TP6. Of the nine excavations only one (TP6) shows any evidence of preserved organic remains, however, they are not described as a unit of peat.

4.1.3 The high elevation of the bedrock on the flood plain militates against the presence of peat because it cannot be accommodated within the phreatic zone, which is permanently

wet and potentially anoxic, and which exists only within the bedrock. Shallow alluvium overlying the bedrock is wholly within the vadose zone and subject to an oxidative environment not suitable for the preservation of organic remains. On the site, the First Terrace gravels, the overlying alluvium and archaeological deposits are also all within the vadose zone and organic remains will only be preserved sporadically – if at all – and only then when sealed within a clay stratum. Permanently waterlogged archaeological deposits will only be found where they have been deeply emplaced within the gravel and exist below the water table. The stream flow of the River Churn and its water storage capacity, which appear to be severely compromised in periods of dry weather (see Section 1.4), will also negatively affect the preservation of organic remains.

4.1.4 The cultural diamict recovered in trench-BH2 provides ample evidence of occupation on the edge of the terrace, possibly dating to the Roman period. Subsequent aggradation of a high level flood alluvium in the same location suggests that, at least on the flanks of the terrace (and further upstream too), human activity was far less evident: the stratum is devoid of charcoal and cbm. This quandary may be explained by positing the timing of the aggradation to after the Roman period when occupation had dwindled. The fact that the deposit is not found in the other trench-boreholes and test pits further west (away from the river) implies that there is an upstanding barrier preventing deposition; this may be the Roman wall found in TP3.

4.2 Archaeological and palaeoenvironmental potential and recommendations

4.2.1 The archaeological potential of the deposits on the site are considered to be high; however, the deposits have little/no palaeoenvironmental potential and no further work is recommended.

5. CONCLUSIONS

5.1 The gravels were found to lie between 104.94m OD in TP5 and 106.89m OD in BH1. Their thickness is between 3.36m and 6.55m. They lie on limestone bedrock of the Jurassic Cornbrash Formation. In trench-BH1, 0.9m of a dark cultural diamict possibly Roman in date, overlies the gravels and is truncated by

Made Ground. In trench-BH2 on the terrace edge, the gravels are overlain by a thick and oxidised cultural diamict which represents evidence of occupation of the floodplain (possibly Roman). This deposit is overlain by a high level flood deposit of reduced silt/clay lacking in any evidence of occupation and is posited to be post-Roman in date. The stratum is truncated by Made Ground. In trench-BH3, the gravels are overlain by a sequence of construction levels that are believed to include a stiff, oxidised clay stratum for a cobbled surface. This surface is overlain by a fine diamict containing abundant granules of (?Roman) cbm. A truncated black silt/clay, with similarities to the dark cultural diamict in trench-BH1, caps the sequence. Made Ground truncates the earlier deposits in all trench-boreholes.

5.2 No organic strata were recovered and the deposits exist within the vadose zone of the nearby River Churn.

6. ACKNOWLEDGEMENTS

6.1 ARCA would like to thank the following for their help during the present project: Richard Young and Jerry Austin of Cotswold Archaeology Ltd, Sarah Clarke of Nicholls Colton Group Ltd, and Dr Eleanor Standley of the University of Oxford.

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APPENDIX 1: LOCATION OF TRENCH-BOREHOLES AND 1998 TEST PITS

TP1	402604.51	202047.117	108.82
TP2	402624.392	202052.272	108.69
TP3	402646.243	202061.339	108.49
TP4	402623.856	202093.214	108.54
TP5	402666.923	202012.546	107.74
TP6	402669.863	202072.331	108.21
Trench-BH1	402621.199	202044.183	108.742
Trench-BH2	402655.737	202030.764	108.649
Trench-BH3	402642.416	202067.435	108.465

APPENDIX 2: TRENCH-BOREHOLE LITHOLOGY

Geotechnical drilling results in italics.

Trench-Borehole	Top m	Base m	Lithology	Description
BH1	0.00	0.13	Tarmac	
BH1	0.13	0.95	Gravel	Made ground sub-base
BH1	0.95	1.35	Cultural diamict	2.5Y 2.5/1 Black firm and moist silt/clay with frequent isolated very fine sand grains; rare coarse sand-sized to granular shell fragments; occasional coarse-sand sized to granular, sub-angular cbm and coarse-sand sized angular an eroded limestone. No evidence of bioturbation (a Dark Earth type material but not over Roman remains). Occasional fine to coarse pebble-sized platy and rounded limestone. Oxidation mottles. Gradual boundary to:
BH1	1.35	1.85	Cultural diamict	2.5 Y 4/1 Grey, wet becoming muddy silt/clay with continuation of clasts from above unit. Diffuse boundary to:
BH1	1.85	1.91	Gravel	10YR 4/6 Dark yellowish brown to 10YR 4/2 Dark greyish brown fine to medium gravel with well-rounded limestone and platy (oblate) limestone clasts granular to medium pebble-sized. Matrix of oxidised and iron stained silt/clay and sand. Matrix supported. (End of auger hole).
BH1	*2.65*	*8.4*	*Gravel*	

BH1	*8.4*	*13.0*	*Limestone*	
BH2	0.00	0.10	Tarmac	
BH2	0.10	0.90	Gravel	Made ground sub-base
BH2	0.90	1.10	Silt/clay	5Y 4/1 Dark grey firm and damp silt/clay with occasional whole shell (fresh water and *Hispida* sp.) and single ostracod. Very rare charcoal grain and plant fibres. Occasional coarse pebble-sized earthworm borrows/root hole heavily oxidised and iron oxide encrusted. Rare very fine sand grains and sub-angular, tabular sandy limestone clast of coarse pebble-size at base (Fine grained flood alluvium). Sharp and irregular boundary to:
BH2	1.10	2.60	Cultural diamict	10 YR 4/2 Dark greyish brown firm and damp, oxidised fine diamict. Occasional medium pebbles of angular platy iron oxide stained limestone. Occasional to frequent grain to fine pebble-sized charcoal. Rare shell. Frequent grains and granules of sub-angular cbm. Becomes very wet. Diffuse boundary to:
BH2	2.60	2.65	Gravel	10YR 4/6 Dark yellowish brown to 10 YR 4/2 Dark greyish brown fine to medium gravel with well-rounded limestone and platy limestone clasts granular to medium pebble-sized. Matrix of oxidised and iron stained silt/clay and sand. Matrix supported. (End of auger hole).
BH2	*2.65*	*6.5*	*Gravel*	
BH2	*6.5*	*10.4*	*Limestone*	

BH3	0.00	0.11	Tarmac	
BH3	0.11	0.64	Gravel	Made ground sub-base
BH3	0.64	0.72	Cultural diamict	2.5Y 3/1 Very dark grey, firm and moist silt/clay. Occasional to frequent coarse sand-sized to fine pebble-sized sub-angular and angular limestone. Occasional grains to coarse pebble-sized cbm. Gritty unit in places. Very rare granular sized plant fragments. Rare grains and granules of charcoal. (Cultural diamict) (303). Sharp boundary to:
BH3	0.72	0.78	Cultural diamict	10 YR 3/4Dark yellowish brown matrix supported very fine gravel Frequent grains and granules of angular and sub-angular cbm. Rare to occasional granules of limestone: Colour imparted by red cbm. Sharp boundary to:
BH3	0.78	0.89	Cobbles and boulders	Top cobble layer (304). Greyish hard fine shelly limestone.
BH3	0.89	1.18	Cobbles and boulders	Boulders (305) of long axis vertically orientated yellowish shelly and sandy limestone (Cornbrash Formation?).
BH3	1.18	1.52	Fine diamict	10YR 4/2 Dark greyish brown wet silt/clay firm and finely sandy (ooids) Occasional to frequent granules of rounded limestone. And play fine pebble clasts. (trample layer?). Diffuse boundary to:

BH3	1.52	2.14	Silt/clay	7.5YR 4/4 Brown stiff and damp oxidised silt/clay with frequent manganese oxide grains. Grades into 10YR 6/6 Brownish yellow clay. Occasional fine pebbles of rounded limestone. (Possible clay make up?). Gradual boundary to:
BH3	2.14	2.30	Gravel	10YR 6/6 Brownish yellow to 10YR 5/4 Yellowish brown, loose and wet, fine gravel of well-rounded granular to fine pebble-sized platy limestone. Matrix supported. Matrix of wet mud sand and silt. (End of auger hole).
BH3	*2.30*	*5.50*	*Gravel*	
BH3	*5.50*	*6.80*	*Limestone*	

1998 Test pits			
Test pits	**Top m**	**Base m**	**Stratigraphic unit**
TP1	0.00	1.01	Made Ground
TP1	1.01	2.20	Archaeological deposits
TP1	2.20	3.50	Fine grained alluvium
TP1	3.50	4.00	River gravel deposits

TP2	0.00	0.78	Made Ground
TP2	0.78	1.42	Archaeological deposits
TP3	0.00	0.67	Made Ground
TP3	0.67	1.70	Archaeological deposits
TP3	1.70	2.20	Fine grained alluvium
TP3	2.20	2.70	River gravel deposits
TP4	0.00	0.47	Made Ground
TP4	0.47	2.00	Archaeological deposits
TP4	2.00	2.50	River gravel deposits
TP5	0.00	1.01	Made Ground
TP5	1.01	2.30	Archaeological deposits
TP5	2.30	2.80	Fine grained alluvium
TP5	2.80	3.30	River gravel deposits
TP6	0.00	0.54	Made Ground

TP6	0.54	1.76	Archaeological deposits
TP6	1.76	1.97	Fine grained alluvium
TP6	1.97	2.47	River gravel deposits