ARCHAEOLOGICAL BOREHOLE INVESTIGATION AT PORTLAND WALK, DIGLIS, WORCESTER

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With contributions by Dr Phillip Allen

Revision 1

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Part 1 Project summary

An archaeological borehole investigation was undertaken at Portland Walk, Diglis, Worcester (NGR: SO 8490 5402). It was undertaken on behalf of Severn Trent Water, who intend to construct a shaft storage tank, reconstruct the existing storm overflow chamber and construct a new sewer. The project aimed to sample and analyse an organic clay identified from previous boreholes in the vicinity.

A single borehole was sunk using a percussive rig of U100 size to a depth of 8.65m at which level natural Keuper Marl was encountered. The stratigraphy of the deposits was recorded and the cores were retained for further analysis. Relatively modern deposits were recorded to a depth of 5m below which was a metre thick layer of brick rubble, or probably early 19th century date. Between this deposit and the natural marl, a series of organic clays were recovered. Sub samples were taken of these clays. It is unclear if they were of Roman or post-medieval date.

Pollen and diatom analysis of nine sub samples was undertaken by Archaeological Research Services Ltd. Diatoms were almost non-existent possibly due to extreme acidity or extreme alkalinity in the depositional environment. Preservation of pollen varied throughout the site. This may be attributed to differential deposition and post deposition conditions across the site. Many of the grains were crumpled suggesting mechanical damage due to compaction and in general pollen preservation was poor. Pollen counts were indicative of a damp open environment with some drier ground nearby. Barley and dandelions represented evidence of human activity in the vicinity.

Of nine samples analysed, only one was considered to merit further work, although it is thought that even at this level, poor pollen preservation could produce a biased vegetation reconstruction.

Part 2 Detailed report

1. Background

1.1 Reasons for the project

An archaeological borehole investigation was undertaken at Portland Walk, Diglis, Worcester (NGR: SO 8490 5402; Fig 1). It was undertaken on behalf of Severn Trent Water, who intend to construct a shaft storage tank, reconstruct the existing storm overflow chamber and construct a new sewer. Worcester City Museum Archaeology Section considers that remains of archaeological interest may be affected.

1.2 Project parameters

The project conforms (with amendments as outlined above) to a specification prepared by Dr Alex Jones, Archaeological Consultant for Severn Trent Water Ltd and for which a project proposal (including detailed specification) was produced (HEAS 2007).

1.3 Aims

The project provided the potential opportunity to address a number of identified research priorities (WCMAS 2007). Specifically the aims of the project were to investigate

- The character and development of the Frog Brook valley and stream (RP 1.2)
- Roman activity in the Frog Brook valley (RP 3.7)
- Environmental change in Worcester's hinterland (RP7.21)

2. Methods

2.1 Documentary search

Prior to fieldwork commencing a search was made of Worcester City Historic Environment Record (HER). In addition to the sources listed in the bibliography the following were also consulted:

Cartographic sources

- 1st edition Ordnance Survey map, 1886-8, scale 25":1 mile
- 1904, Ordnance Survey map, County series, scale 25":1 mile
- 1928, Ordnance Survey map 1:2500 County series, scale 25":1 mile
- 1940, Ordnance Survey map 1:2500 County series, scale 25":1 mile

2.2 Fieldwork methodology

2.2.1 Fieldwork strategy

A detailed specification has been prepared by the Service (HEAS 2007). Fieldwork was undertaken on 9th July 2007. The site reference number and site code is WCM 101558.

A single borehole was excavated at the site using a percussive rig to allow the recovery of an intact and undisturbed core sequence of U100 size. The stratigraphy of the deposits was recorded in the field. The borehole was excavated to a depth of 8.65m below the modern surface.

2.2.2 Structural analysis

All fieldwork records were checked and cross-referenced. Analysis was effected through a combination of structural, artefactual and ecofactual evidence, allied to the information derived from other sources.

2.3 Artefact methodology

2.3.1 Artefact recovery policy

The artefact recovery policy conformed to standard Service practice (CAS 1995; appendix 2). In the event no archaeological artefacts were recovered during the project.

2.4 Environmental archaeology methodology

It was originally intended that sub-samples should be taken to investigate, to assessment level initially, pollen, plant macrofossils insect remains. However following consultation with the Service Environmental Archaeologist Elizabeth Pearson and Dr Alex Jones, it was decided that due to the small volume of samples which could be taken, pollen and diatom analysis would be more appropriate. Accordingly five sub samples were taken for pollen analysis and four for diatom analysis. Palaeoecological assessment was carried out by Archaeological Research Services and the following two sections are derived from their report (ARS 2007).

2.4.1 Pollen preparation, by Dr Phillip Allen

Five samples were collected for pollen assessment, the sample number and depth of sample can be seen in Table 1. At each selected level 2g of sediment was used per sample. Three Lycopodium tablets (batch number 483216) were added to each sample prior to chemical preparation for the purposes of calculating pollen concentrations as described by Stockmarr (1971). The chemical preparation of the samples followed the acid digestion based on the procedure as described by Barber (1976). Further details of the laboratory procedure are contained in Appendix A. All counts were undertaken using a Leica DME compound microscope at a magnification of x400. A standard assessment count of the area of one 22x22 mm cover slip of pollen and non-pollen-palynomorphs was employed. The count included exotic grains, Lycopodium spores and aquatics to give an indication of pollen concentrations. Identification of pollen grains and spores was aided by the use of published identification keys, including Faegri & Iversen (1989), Moore et al. (1991), van Geel et al. (1998), Hans-Jürgen Beug (2004) and by comparison with pollen reference material (type slides) held by ARS Ltd.

2.4.2 Diatom preparation, by Dr Phillip Allen

Four samples were collected for diatom assessment and the sample numbers and depth can be seen in Table 1. The sediment samples were prepared according to standard laboratory

techniques (Barber and Haworth, 1981). This involved distillation on a hotplate with Hydrogen peroxide to remove any organic matter and then a series of washes with distilled water to concentrate the diatoms and reduce the amount of clay and silt particulate matter. A pipette of the suspension was then placed onto a glass cover-slip and mounted onto microscope slides with Naphrax, a high refractive index, to illustrate the possible species preserved. Diatom species were identified with reference to Hartley et al. (1996), Hendey (1964) and Van der Werf and Huls (1957-74). Diatom nomenclature follows Hartley (1996) and salinity and lifeform classification is based upon Van Dam et al. (1994), Vos and de Wolf (1993) and Denys (1991/2).

The sediments were examined for their diatom preservation potential and the major species contained within each sample. This would give a broad indication of the depositional environment in conjunction with other microfossil analyses and any other lithostratigraphy/sedimentary analysis that has been carried out

Context number	Depth below ground surface(m)
108 Pollen	6.35
109	6.8
109	7.4
109	8.1
110	8.2
110 Diatom	8.2
109	8.00
109	7.4
109	6.9

Table 1. Levels selected for pollen and diatom assessment at the Diglis site

2.5 The methods in retrospect

The methods adopted allow a high degree of confidence that the aims of the project have been achieved.

3. Topographical and archaeological context

The site lies on the eastern bank of the River Severn, on a patch of waste ground at the south western end of Portland Walk immediately north of a former porcelain factory. Some 175m to the south of the site the Birmingham and Worcester Canal enters the Severn. Diglis lies within the Roman and medieval suburb of Worcester and within a designated Archaeologically Sensitive Area. No archaeological field investigation has been previously undertaken within the development site. The post-medieval character of the site was mainly industrial.

The site lies in an urban area unsurveyed by the Soil Survey of England and Wales (1983). However the predominant soils on the adjacent bank of the River Severn belong to the Wharfe soil association (561a), comprising deep stoneless permeable fine loamy soils, some similar soils variably affected by groundwater, on flat land, with a risk of flooding. The parent material is described as river alluvium (Soil Survey of England and Wales, 1983). The underlying geology consists of the sedimentary sequences of Triassic mudstones overlain by extensive undifferentiated fluvial sands and gravels. Overlying the river terraces are intercalated organic and inorganic deposits within the clay, silt and sand alluvium deposited during the Holocene (Barclay *et al* 1988). The material used for this assessment was sub-sampled from the Holocene sequences.

On the first edition Ordnance Survey map of 1886-8 the site is shown as the corner of some open ground. Portland Walk is not marked although its northern boundary is evident against which some small unidentified structures are built. By the second edition Ordnance Survey of 1904, the site is a timber yard occupied by a long thin building. On the third edition of 1928, the timber yard has been replaced by another building to the north of the plot, which may relate to a terrace of houses which has been built facing the river slightly to the north. The 1940 edition shows that a group of four semi-detached houses have been built along the footpath, which is now marked as Portland Walk.

A number of archaeological investigations have been undertaken in the vicinity, the majority of which have identified the natural sequence and the potential for environmental remains.

At Albion Mill, on Mill Street to the north, ditches and pits of early medieval date have been discovered, indicative of low intensity occupation, along with remains of the mill buildings, deliberate dumping of building debris, sealed and truncated by an apparent plough soil. (WCM 101088 and 101101).

Investigations at 13/15, Mill Street (WCM 101215), Portland Street & Willow Street (WCM 101358) to the north identified a similar sequence: 12th century settlement and possible small-scale metalworking, along with residual prehistoric and Roman material. The area appears to have subsequently been put to pasture until the early 19th century, when residential development expanded here.

Trenches dug adjacent to Diglis Inner Canal Basin, to the south-east of the present site, did not identify activity predating the 19th century former warehouse floor surfaces, while the natural matrix was observed within 1m of the modern ground surface (WCM 101146). A similar situation was observed during works at Royal Worcester, Portland Walk, when no pre-modern deposits were recorded and the area appeared to have been raised with domestic and demolition rubble in the late 19th/early 20th century (WCM 101463). Investigations of Diglis Lock Cottage basin wall revealed a possible channel of the Frog Brook, which was canalised in the 19th century (WCM 101437).

Environmental samples analysed from investigations at the Riverside Revetment, at Diglis Hotel Diglis, indicated a landscape typical of floodplain/meadowland vegetation dominated by herbs and ferns with little woodland on the immediate site, which would suggest that the site was marshy. Well-stratified alluvial deposits were recorded at a depth of 3.55m (9.37m AOD) below the level of Diglis Parade. It was unclear if these were of Roman or post-medieval date. (WCM 101221 & 101276; Deeks *et al* 2004).

Further works at Diglis Hotel identified the natural, variously beneath a buried topsoil and subsoil, sloping down to the south-west, at a depth of between 0.09m (14.9m AOD), 2.2m (16.37m AOD), and *c* 3.3m (15.20m AOD), and no deposits predating 18th century garden soils, suggesting that terracing has been undertaken at stages from this period onwards. The natural sequence comprised sand at the top of the terrace, with gravel and marl tipping down the slope toward the river (WCM 100384 & 101441).

An investigation at Diglis Basin in advance of proposed development by the British Waterways Board revealed three main phases of deposits. The first consisted of quaternary deposits of sands and gravels, approximately 5m below the ground surface and between 1.6-3m thick overlying Keuper Marl to an undetermined depth. The second phase was medieval to 18th/19th century alluvial deposits of silt and clay between 1.3-2.6m thick. It was sampled and the pollen analysed, which was found again to be indicative of meadowland. The last phase was later post-medieval deposits, up to 2.7m deep, of brick and tile rubble, dredged material, modern deposits, industrial and porcelain waste. The potential for well-preserved environmental remains in this area was highlighted (WCM 100243).

At Kings School to the north, two evaluation trenches were excavated on the supposed line of the southern rampart of the castle (WCM 96017). Natural sand and silt deposits were identified, sloping down from north to south, from 18.20m to 15.46m AOD. The steep slope down to the south was conjectured to represent the northern side of a ditch, possibly the castle ditch (WCM 96021) following the Severn Street line. The great depth of late post-medieval made ground within the perimeter retaining wall (WCM 96023) suggests that the height differential between the school/castle site and Severn Street is not a reflection of the survival of castle perimeter earthworks, but rather it was the product of ground-raising prior to the construction of the King's School buildings in the late 19th century (WCM 100378).

A number of archaeological artefacts have been recovered from the River Severn in the vicinity, including a Bronze Age axe (WCM 100957) and Iron Age coins (WCM 100699). Lastly a small Roman cremation cemetery was discovered during sand extraction in 1860, to the west of Portland Street, along with a tile kiln, which has been reinterpreted as of medieval date (WCM 96613, 96189, 100041, 100379).

4. Results

The borehole was excavated to a depth of 8.65m. Table 2 below provides a summary of the borehole log, which is reproduced in full in Appendix 1. Sub samples were taken from the organic clay strata (108-110), which lay below brick rubble, which was present between 5.0 and 6.0m below ground surface.

Depth below ground surface (m)	Context	Description summary
0-0.35	100	Topsoil
0.35-1.45	101	Made ground with 19th/20th C pot
1.45-1.5	102	Reddish brown sandy clay with mortar fragments
1.5-2.8	103	Dark greyish brown silty sand with 19th/20th C pot
2.8-3.1	104	Mid brownish clay silt – one sherd 19th C pot
3.1-4.2	105	Light reddish/greyish brown silt
4.2-5.0	106	Mid brownish-light olive silt
5.0-6.0	107	Brick rubble
6.0-6.3	No deposit	
6.3-6.55	108	Light greyish brown silt(y clay)
6.55-7.0	109	Mid brownish grey silt(y clay) with charcoal fragments
7.0-7.4	No deposit	
7.4-7.5	109	Mid brownish grey silt(y clay) with charcoal fragments
7.5-7.75	No deposit	
7.75-8.15	109	Mid brownish grey silt(y clay) with charcoal fragments
8.15-8.25	110	Medium sand(y clay)
8.25-8.65	111	Natural Marl

Table 2. Borehole data

4.1 Environmental analysis, by Dr Phillip Allen

4.1.1 Pollen (all contexts)

The examination of the five levels from the Diglis site described an area with variable levels of pollen and non-pollen palynomorph preservation. The results of the evaluation are presented in Table 3.

Site	Context				
Diglis	108 6.35m	109 6.8m	109 7.4m	109 8.1m	110 8.2m
Arboreal					
Alnus	1			1	1
Betula			1		
Tilia				1	
Shrubs Dwarf shrubs					
Corylus avellana-type			1		
Disturbed ground human activity					
Linum catharticum			1		
Hordeum sativum-type		2			
Grass and herbs					
Poaceae		3	3		3
Anthemis-type	1	1			
Rosaceae		2			
Cannabinaceae		1	2	1	
Wet damp ground and aquatics					
Cyperaceae	1	1	3	2	1
Decay resistant					
Lactuceae			2		
Taraxacum officinale	1	2	6	2	1
Spores and NPP					
T207					2
T77			1	2	
Filicales	1				
Polypodium		1			
Pteridium					1
Sphagnum	1				
spike charcoal and preservation					
Lycopodium	75	26	111	37	52
C G 50	1	3	6	0	5
C L 50	7	12	8	5	5
UN organics	3	2	3	5	4
U N S	9	3	11	4	5
WP	1	3	0	0	0
C2	0	0	2	0	0
C3	0	0	0	1	0
C4	0	0	1	1	0
D5	1	6	16	4	4
D6	0	0	0	1	1
BR 8	0	0	1	1	1
BR 9	0	0	0	0	0
CR 10	1	9	14	5	5
CR 11	2	0	3	0	0
UnID	3	5	7	5	2
Total Pollen	4	12	19	7	6
Concentration grains per gram	1982	17154	6362	7031	4288

Table 3. Total count of pollen and NPP for Diglis

The assessed pollen has not been placed into a zoned pollen diagram because the total number of grains identified at assessment level is too low for statistical significance and the graphed curves would have been misleading. The count data used and presented (Table 2) includes all identified pollen regardless of the preservation state (WP (well preserved) to CR 11 (extensively crumpled)). However, the preservation condition of palynomorphs is a key feature for determining potential for full analysis of palaeobotanical remains as part of the assessment stage (English Heritage 1991; Jones et al. 2007).

5. Synthesis

The natural matrix of Keuper marl was recorded at a depth of 8.25m below the present ground surface. This was sealed by a thin band of sand and sandy clay, itself below a sequence of silt and silty clay layers from 6.30m depth. These silts contained occasional charcoal fragments. It is unclear if they are of Roman or post-medieval date. Brick rubble was observed at 5-6m depth, which is interpreted to be the result of dumping to raise the level, probably during construction of the Birmingham and Worcester canal to the south-east or the adjacent residential development to the north in the early decades of the 19th century.

5.1 Interpretation of Pollen (Dr Phillip Allen)

The range of pollen from the Diglis site was relatively limited. However, the identified pollen indicates a terrestrial environment. The range of arboreal types was narrow with Alnus glutinosa (alder) Betula (birch) and Tilia (lime) being recorded. Alder was the most frequently recorded arboreal type and was present in three of the five levels assessed and indicates damp ground conditions close to the site. The birch and lime could represent individual trees or small stands of mixed woodland on drier ground close to the site, although lime is insect pollinated and can be underrepresented in pollen records.

The shrub and woody climber types were very limited and a single grain of Corylus avellana-type (hazel) was recorded. Hazel frequently represents the scrub component of woodland and the low record could reflect the relatively low arboreal composition at the Diglis site. The presence of hazel, however, provides further support to the suggestion of damp/wet ground conditions indicated by the alder, as hazel is also known to inhabit wet places in woods, along floodplains and/or by lakes, streams and rivers. The herbaceous pollens were quite limited but the most widely represented types recorded during the assessment. Cyperaceae (sedges) was present in every level assessed while Poaceae (grasses) and Cannabinaceae (hemp family) were present in three out of five levels. These types indicate the dominance of open environments, with the sedges indicative of damp open and/or wet marshy conditions. Rosaceae (rose family – including raspberry and blackberries) and Anthemis-type (commonly known as chamomile but are of the Asteraceae type including daisy or sun flower families) were present but not in high frequencies. The Rosaceae types could have been available as a gathered food source. However, the Rosaceae family is extensive (3000+ species) and includes many non-edible plant types; therefore it is not certain that the identified Rosaceae grain was associated with human activity. The Anthemistypes (chamomile) are common types on arable and waste ground and also indicate open environments. Pollen types associated with human activity were present but not particularly diverse. However, Hordeum-type (barley) was recorded and is indicative of cereal cultivation close to the site. Additional human indicators were Linum cartharticum (fairy flax), Taraxacum officinale (common dandelions) and Lactuceae (‘dandelions’). The fairy flax may be further evidence of human activity at the site as it was frequently used for dyeing fabrics. However, it was single grain identification and therefore this is a tentative interpretation as fairy flax is known to grow on sandy substrates and may be a natural component of the local vegetation composition. Lactuceae (‘dandilions’) and Taraxacum officinale (common dandelion) were frequently recorded during the assessment and may indicate pastoral activity; however this is a tentative interpretation as no additional pastoral indicators were recorded. It is more likely that these decay resistant types may be reflecting the longevity of preferential preservation rather than pastoral activity. The range of non-pollen palynomorphs recorded throughout the assessment were also quite limited, but do support the interpretation produced from the pollen identifications. Filicales (ferns) and Pteridium (bracken) are common components of woodland environments but were recorded in low frequencies, possibly in relation to the limited arboreal pollen recorded in the assessment. Wet ground conditions were suggested by the presence of Sphagnum, although Sphagnum produces spores during times of stress e.g. dry phases. Type 207 is a spore that is known to grow on the roots of birch whilst Type 77 is known to grow among Sphagnum and is indicative of hummocky vegetation (van Geel, 1998).

The frequent wetting and drying of floodplain areas could promote bacterial activity that reduces the preservation potential of the pollen. Much pollen examined during the assessment did display damage commonly associated with bacterial and mechanical deterioration which could relate to floodplain activity in terms of mechanical damage via fluvial transport to the site and bacterial damage during a drying phase.

5.2 Diatoms (Dr Phillip Allen)

The samples were prepared and scanned but they did not yield any results in terms of diatom assemblage. All four of the samples listed in Table 1 were deficient of any diatom valves, whether fractured or whole.

There are a number of reasons why the absences of diatoms could occur, the mobilisation of biogenic silica due to either increased extreme acidity or extreme alkalinity in the depositional environment, or that the sediment did not contain diatoms in the first place. This in itself would suggest that the palaeoenvironment was not particularly wet for any significant period of time (i.e. characterised by waterlogged ground or standing water). Diatoms live in nearly all aqueous environments including interstitial pore water spaces in soil, but if a depositional environment is predominantly dry for most of its forming years then diatoms would simply not be present.

6. Potential for future work and recommendations

6.1 Pollen Taphonomy (Dr Phillip Allen)

The range of pollen and non-pollen palynomorphs taphonomy from the Diglis site was relatively diverse and suggests this is a complex site. The preservation condition is listed as one of the key features for determining potential for full analysis of palaeobotanical remains as part of the assessment stage of MAP2 projects (English Heritage 1991). The total preservation values for each monolith/level are displayed in Table 4.

Diglis	108 6.35m	109 6.8m	109 7.4m	109 8.1m	110 8.2m
WP	1	3			
C2			2		
C3				1	
C4			1	1	
D5	1	6	16	4	4
D6				1	1
BR 8			1	1	1
BR 9					
CR 10	1	9	14	5	5
CR 11	2		3		
UnID	3	5	7	5	2

Table 4. Preservation values of pollen from Diglis (after Delcourt & Delcourt 1980)

The preservation condition of the pollen varied throughout the Diglis site. The degree of preservation is an important indicator value (Jones 2007) that most likely reflects the differential deposition and post deposition conditions across the site. It is worth considering that when the preservation condition is poor some pollen types may be completely absent from the preserved record and this could produce a biased vegetation reconstruction. The most frequent preservation condition of the pollen was crumpled (CR10) suggesting many grains had suffered mechanical damage due to compaction of the grains within the sediment particularly resulting from the progressive extrusion of water (Delcourt & Delcourt 1980). However corrosion (C2- D7) resulting from biochemical oxidation related to fungal/bacterial activity frequently occurs. The preservation of the Diglis pollen is not exceptional and the

damage to the pollen indicated phases of drying where the combination of dehydration and chemical oxidation eroded the pollen.

6.2 Pollen and Diatoms (Dr Phillip Allen)

The range of pollen recorded in the assessment varied. The quality and frequency of the pollen was used as a guide for suggesting whether further counting be undertaken. All levels have been placed in Table 5 with, a Yes or No recommendation for a full count.

Context and level	Practical for a full count	Recommended for a full count
108 6.35m	No	No
109 6.8m	Yes	Yes
109 7.4m	No	No
109 8.1m	No	No
110 8.2m	No	No
Diatom 110 8.2m	No	No
109 8m	No	No
109 7.4m	No	No
109 6.9m	No	No

Table 5. Assessed pollen and diatom levels with recommendations for further work.

6.3 Conclusion (Dr Phillip Allen)

The potential for detailed palaeoecological analysis from the sediments from Diglis is low. The preservation of pollen was poor whilst non-existent for diatoms. The level 109 6.8m is considered to be practical for further pollen analysis. However, due to the poor preservation condition it is a realistic possibility that the pollen contained within the sediment of this level have been skewed towards the decay resistant types and a reasonable representation of the pollen spectra may not be achievable.

6.4 Research frameworks

The results of this study *may* inform the following research strategies outlined in the Worcester Urban Archaeological Strategy document 'An outline resource assessment and research framework for the archaeology of Worcester' (WCMAS 2007):

- The dating, character and origins of Severn alluviation (RP1.3);
- Dating of gravel terraces (RP1.7);
- Environmental change in Worcester's hinterland (RP7.21).

7. Publication summary

The Service has a professional obligation to publish the results of archaeological projects within a reasonable period of time. To this end, the Service intends to use this summary as the basis for publication through local or regional journals. The client is requested to consider the content of this section as being acceptable for such publication.

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A single borehole was sunk using a percussive rig of U100 size to a depth of 8.65m at which level natural Keuper Marl was encountered. The stratigraphy of the deposits was recorded and the cores were retained for further analysis. Relatively modern deposits were recorded to a depth of 5m, below which was a metre thick layer of brick rubble, probably deposited in the early 19th century. Between this deposit and the natural marl, a series of organic clays were recovered. Sub samples were taken of these clays. It is unclear if they were of Roman or post-medieval date.

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8. Acknowledgements

The Service would like to thank the following for their kind assistance in the successful conclusion of this project, Dr Alex Jones (Archaeological Consultant, Severn Trent Water Ltd), Dr Phillip Allen (Archaeological Research Services Ltd) and Mr James Dinn (Archaeological Officer, Worcester City Museum Archaeology Service, Worcester City Council).

9. Personnel

The fieldwork and report preparation was led by Tom Rogers. The project manager responsible for the quality of the project was Tom Rogers. Fieldwork was undertaken by Tom Rogers and Darren Miller and environmental analysis by Dr Phillip Allen of Archaeological Research Services Ltd.

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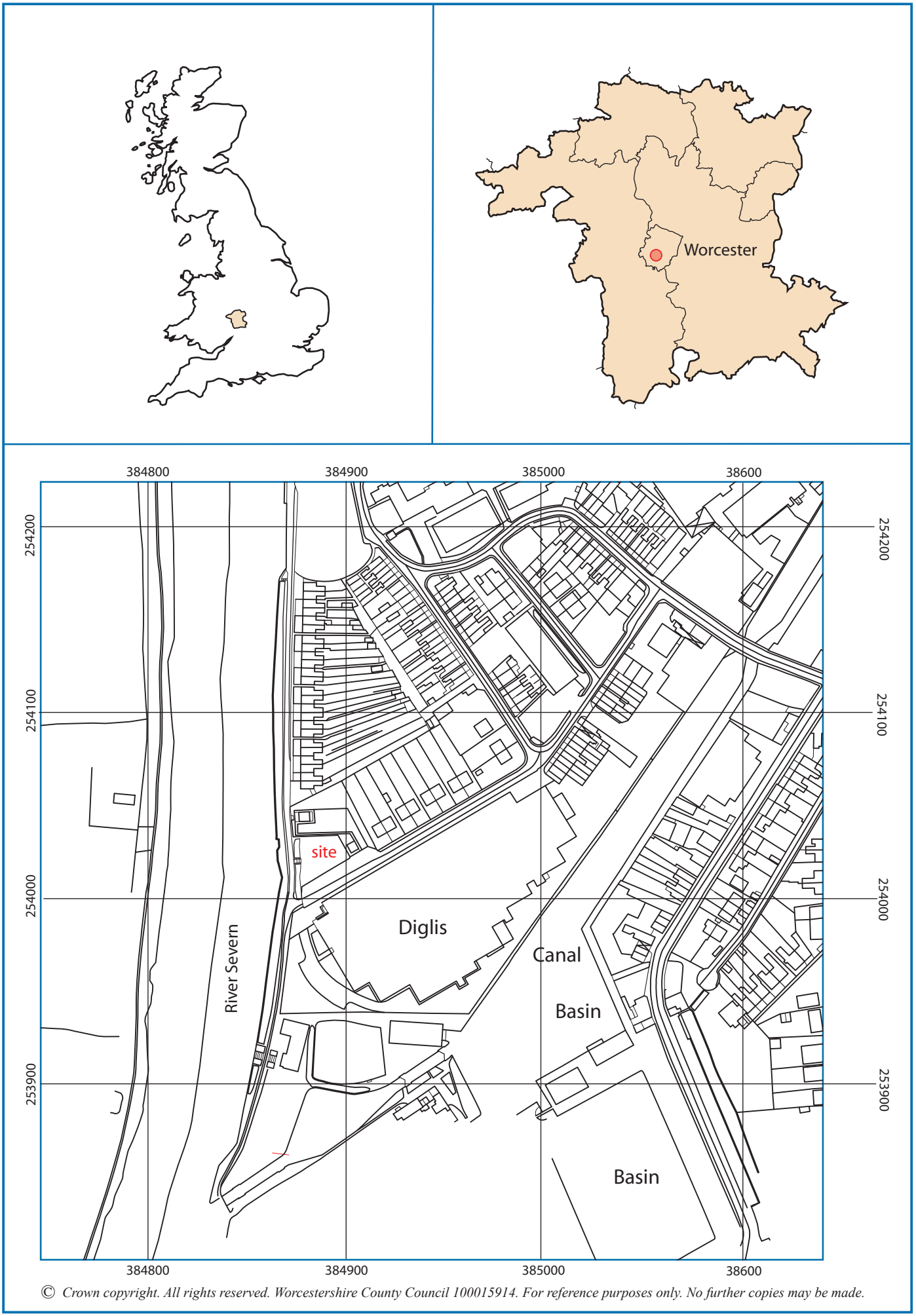
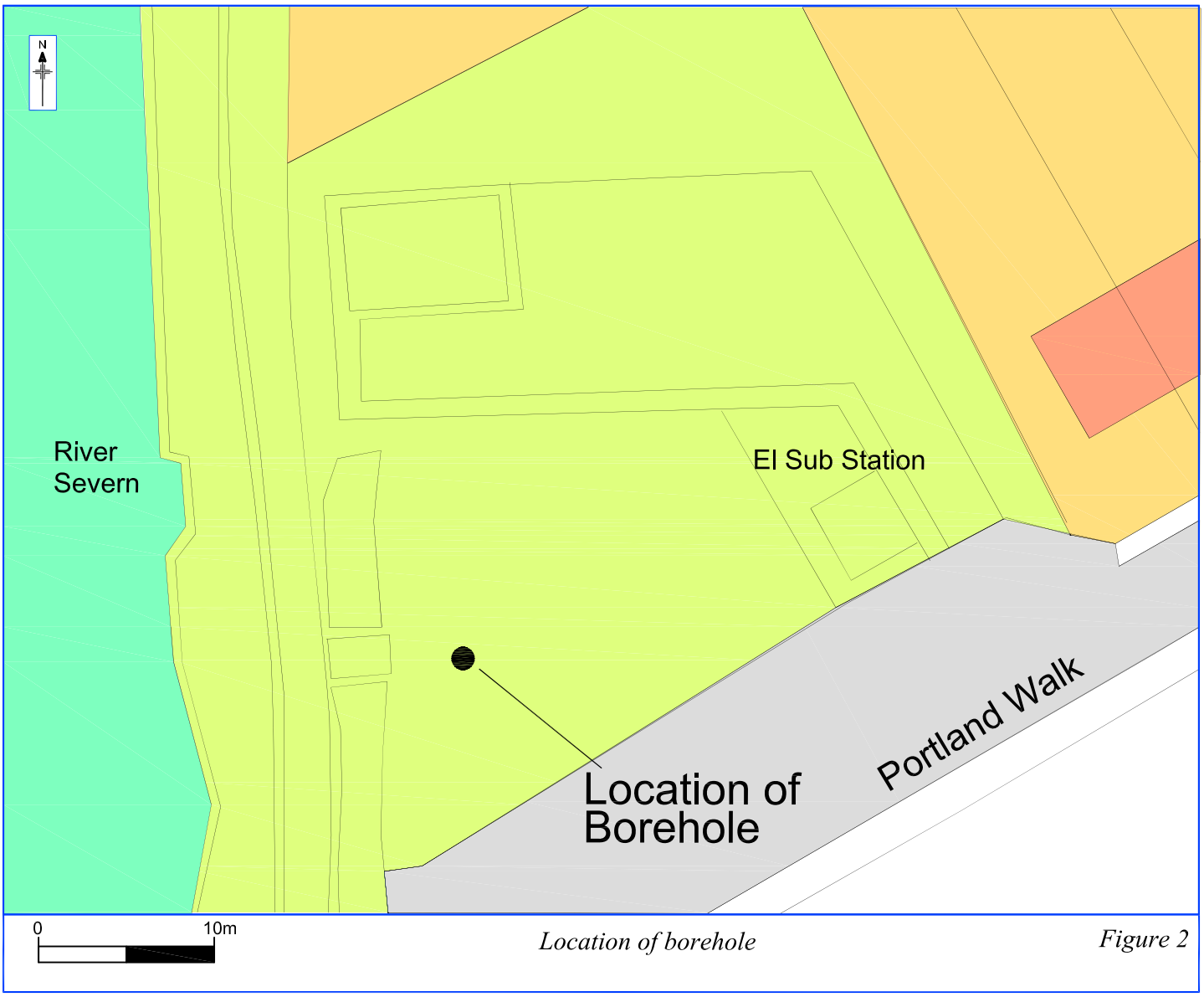
Figures



Location of the site. *Figure 1*



Location of borehole

Figure 2

Appendix 1 Borehole Log

ALLUVIUM RECORD SHEET

Site code	Project no P3098	Site name	Profile location
Initials	Date	Photos:	

m	Context + inorganic components	Sample no.	Colour	Texture	Organics charcoal	Sediment structures	Stains & pans	Ped structures	Mottles	Coating s	Worms & roots
0	100 Few small gravels (Topsoil)		Mid greyish brown	Sandy silt	Common charcoal flecks + flecks			Weak blocky	Few small aggregates light reddish brown silty clay		Few medium roots. Few fine roots.
0.5	101 Abundant brick + mortar frags. (made ground)				Few dense charcoal/coal aggregates. Few charcoal/coal flecks + flecks.			Structureless.			
1.0	19/20C pottery.		Dark greyish brown.		Abundant charcoal/coke flecks + aggregates						
1.5	102 Common mortar frags		Light reddish brown	Silty clay	Few charcoal/coke flecks + flecks.						
	103 19/20C pottery.		Dark greyish brown.	Sandy silt	Abundant charcoal/coke flecks + aggregates.						
	Few mortar flecks.		Light reddish brown	Fragmented mudstone.	Few charcoal/coke flecks.						
2.0			Dark greyish brown.	Silty sand	Abundant charcoal/coke flecks.						

NOTES:

Worcestershire County Council
Archaeological Service AS42 04/00

ALLUVIUM RECORD SHEET

Site code			Project no P3098	Site name							Profile location
Initials			Date		Photos:						

m	Context	Sample no.	Colour	Texture	Organics charcoal	Sediment structures	Stains & pans	Ped structures	Mottles	Coatings	Worms & roots
2.0	103		Dark greyish brown	Silty	Abundant charcoal/ coke frags			Structure less			
	few sherds 19/20c pottery + glass										
2.5			Light reddish brown	Mudstone							
	104		Mid slightly brownish grey	Silt				Weak blocky	Abundant dark grey mottles (<2mm)		few medium roots
	few small gravels (<2mm) 1 sherd 19C pot (intrusive)										
3.0	105		Light reddish & greyish brown fc						Few - common olive mottles		
	few small gravels (<5mm)										
3.5			olive								
			mid grey								
4.0											

NOTES:

Worcestershire County Council
Archaeological Service AS42 04/00

ALLUVIUM RECORD SHEET

Site code	Project no P3098	Site name	Profile location
Initials	Date	Photos:	

m	Context	Sample no.	Colour	Texture	Organics charcoal	Sediment structures	Stains & pans	Ped structures	Mottles	Coatings	Worms & roots
4.0	105		Light reddish grayish brown.						few/common olive mottles		
	106		Mid brownish grey. Silt.		few charcoal flecks & flecks						
4.5			Light olive brown.								few relict stained light grey blue.
5.0	107										
	Brick rubble		Borehole impeded: no sample collected.								
5.5			Borehole impeded: sample collected & retained.								

NOTES:

ALLUVIUM RECORD SHEET

Site code	Project no P3098	Site name	Profile location
Initials	Date	Photos:	

m	Context	Sample no.	Colour	Texture	Organics charcoal	Sediment structures	Stains & pans	Ped structures	Mottles	Coatings	Worms & roots
6.0				No deposit							
	Pollen 5 X 108		Light greyish brown	Silt.	Few charcoal frags + flecks.				few olive mottles		few reddish roots; sl. light grey stud.
6.5											
	109 X Pollen 4 9C142		Mid brownish grey						few grey-dark grey mottles		
Datum 4 →											
7.0				No deposit							
Datum 3 →	109 X Pollen 3		Mid brownish grey.	Silt	Few charcoal frags + flecks				few grey-dark grey mottles		
7.5				No deposit							
	109.		Mid brownish grey	Silt.	few charcoal frags + flecks						
8.0											

NOTES:

ALLUVIUM RECORD SHEET

Site code	Project no	Site name	Profile location

Initials	Date	Photos:

m	Context	Sample no.	Colour	Texture	Organics charcoal	Sediment structures	Stains & pans	Ped structures	Mottles	Coating s	Worms & roots
Diatom 1 78.0	169 X	Pollen 2	Mid brownish grey	Silt	Few charcoal flecks & flecks						
Diatom 1	110 X	Few small gravels		Medium sand					Olive mottles		
Pollen 1 Clay 1	111		Mid brownish red								
	(Mard)										
85											
				No deposit							
90											
95											

NOTES:

Appendix 2 Technical information

The archive

The archive consists of:

1	Fieldwork progress records AS2
5	Alluvium record sheets

The project archive is intended to be placed at:

Worcester City Museum and Art Gallery
Foregate Street
Worcester
WR1 2PW
Tel. Worcester (01905) 25371