# EXCAVATION AND SALVAGE RECORDING ON THE EVESHAM WRW



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With contributions by James Greig, Andrew Moss and David Smith

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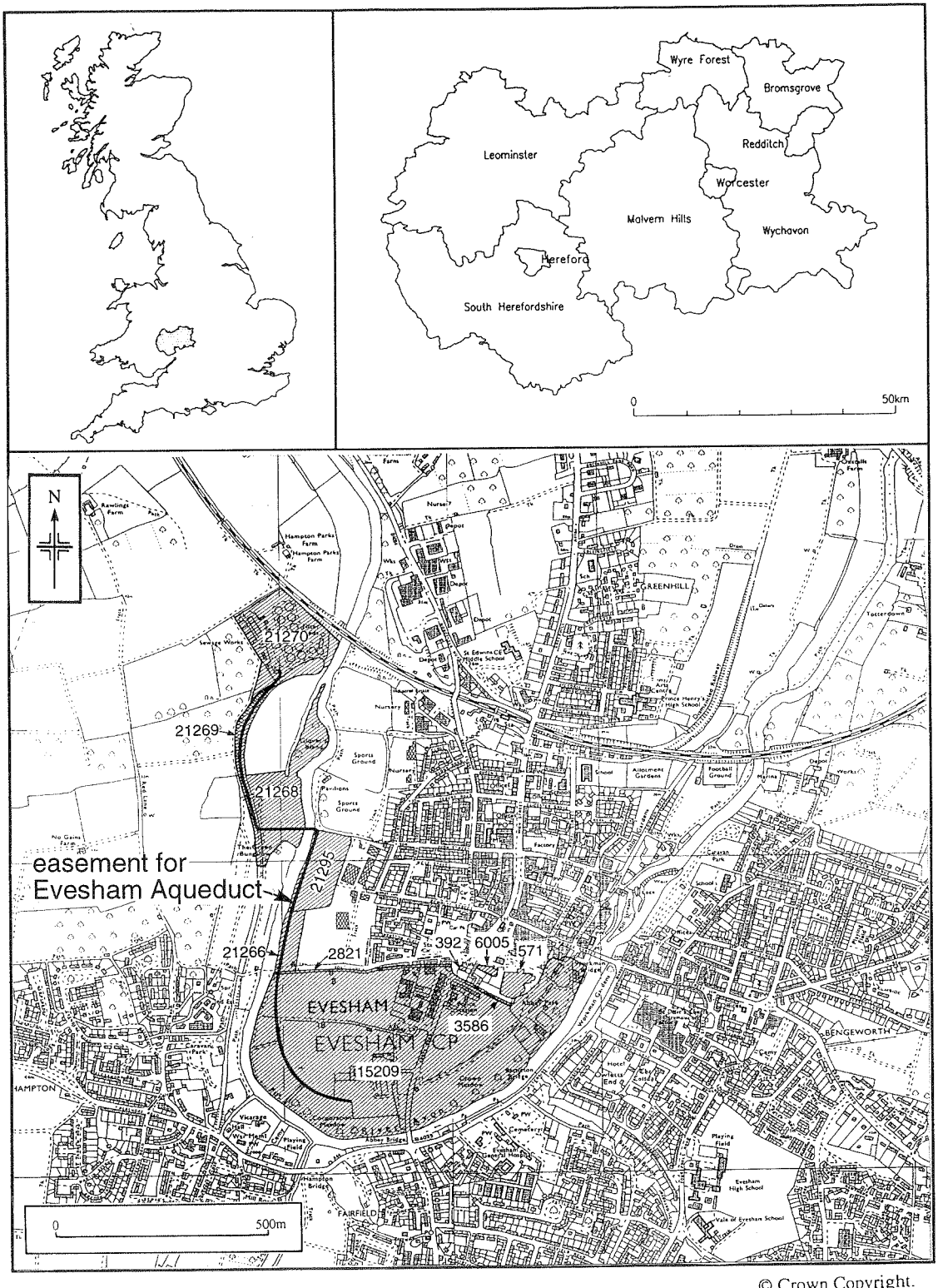


*Figure 1: Location of the sites*

# Excavation and salvage recording on the Evesham WRW

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## Part 1 Project summary

### 1 Reasons for the project

The proposed installation of a sewage pumping main between the Evesham New Terminal Pumping Station and Hampton Parks WRW by Severn Trent Water Ltd affected a number of sites of archaeological interest. Primary amongst these was Abbot Chyryton's Wall (HWCM 2821) which is a scheduled ancient monument (County Monument No Here and Worc 221). Negotiations between the County Archaeological Service, Severn Trent Water Ltd and English Heritage established that it was not possible to avoid the line of the wall and an agreed programme of works was devised to excavate and record the wall in advance of construction. This was to be followed by reinstatement of the wall upon completion of construction works. On the basis of this agreed programme of works, Scheduled Monument Consent was granted for the pipeline construction (11 May 1994; ref HSD 9/2/3160).

Elsewhere along the route of the pipeline it was felt that the potential for the discovery of new sites warranted the presence of an archaeological 'core' team to undertake a watching brief and salvage recording of any archaeological deposits revealed.

Previous archaeological work in Evesham has focused on the Abbey Park and the location of the church and other principal conventual buildings. This has included archaeological recording of Abbot Reginald's Wall (HWCM 6005), another part of the Abbey precinct boundary.

Abbot Chyryton's Wall marks the northern boundary of the precinct of Evesham Abbey (HWCM 15209) which may contain further archaeological remains associated with the Abbey. Typically a precinct may have contained industrial, agricultural and storage buildings and/or evidence of such activities, in addition to areas of pasture or open space. To the north of the wall evidence relating to medieval use of the land lying between the town and the river may survive.

Evidence of earlier activity pre-dating the Abbey may also be encountered along the route of the pipeline, since previous excavations in Evesham have revealed significant quantities of Roman material (Hughes 1990, 174). In addition, the first documentary references to Evesham are in Saxon Charters of varying degrees of authenticity dating from the 8th century when the Abbey is supposed to have been founded. Any evidence of activity of this date would be of greatest importance to the understanding of the early development of the town of Evesham.

## 2 Outline of results and significance

*Abbot Chyryton's Wall and other sites*
Evidence was found for the early development of the boundary of the Evesham Abbey precinct, known as Abbot Chyryton's Wall, and the below-ground condition of the wall was determined. A ditch running at an oblique angle to the wall probably represents a pre-wall boundary for the precinct, possibly associated with a thorn hedge.

Elsewhere on the easement field drains were found that were probably constructed of stone robbed from Abbot Chyryton's Wall, presumably in the post-dissolution period. A brick structure was also found, built adjacent to a former river channel, This was probably a late 19th or early 20th century animal dip.

The results of the excavation of part of the precinct wall are of importance because they have enhanced the knowledge of the scheduled monument. Specifically, they have demonstrated that the known precinct boundary was preceded by a ditch, possibly reinforced by a thorn hedge, which is documented in the 11th or 12th century. They have also demonstrated that, below ground, the wall retains its medieval structural integrity, even in places where it no longer survives as a standing structure.

*The environmental study*
The integrated environmental study has provided valuable contributions to local knowledge. These include changing river regimes, both natural and man-made, and information about local industries from the medieval to the post-medieval period.

The interpretation of the fluvial deposits is ambiguous as there has been little systematic study of these phenomena in the Avon region. There is no doubt that a lower sandy mollusc-rich layer indicated conditions of relatively fast water flow. The difficulty lies in identifying the mechanism by which the deposits have built up within the known topography. It is possible that this derives from the bed of an older channel to the east of the present channel, or that the present channel was wider in the past. This problem is made particularly acute by the possibility that the evidence may relate to activities operating very locally or over a short period of time.

A similar level of uncertainty pertains to the interpretation of the overlying peaty clay. Whilst this must have formed in marshy conditions, where the water was slow moving, the evidence suggests that this micro-environment was sufficiently close to fast-flowing water to be affected by it. Whilst such circumstances occur naturally on the inside of meanders it is also possible that the peat formation may relate to river management in the 17th century.

Changes in the rates of alluvial deposition are commonly associated with changes in the ground cover. In later prehistoric times, in the lower Severn and Avon valleys, such a change in alluvial sediments has been interpreted as resulting from forest clearance and increased agricultural activity. A similar change may have resulted from the expansion of the market gardening industry in the post-medieval period.

The possible cultivation of crops of the cabbage and beet families are all indicated at this time. Evidence of hop or hemp was also found.

Documentary records exist for both industries, hops being a crop that would have found a ready local market at the hop kilns in Brick-kiln Street in the mid-18th century and hemp for the rope making industry in Bengeworth in the late 16th century. The cultivation of willow, presumably in osier beds, provided the raw material for a host of craft industries.

The results of the integrated environmental study are of importance because in the post-medieval period environmental studies are a much neglected area, both regionally and nationally. This period offers considerable potential for the study of garden and orchard crops and possibly the development of varieties, as this is the period when the commercial development of horticulture became important.

The environmental deposits occur in an area that has been peripheral to a market town since the middle ages. Such deposits are high priorities, nationally and regionally, as waterlogged urban and rural material are rare. They can throw light on agricultural management regimes, such as crop rotation or fallowing and industries, such as those associated with cloth and linen-making, the brewing of beer, the making of rope and coarse textiles such as hessian and linseed oil production were all represented.

The voluminous documentary evidence of the later post-medieval period, when linked to the evidence above can provide an indication of trade links and the influence of the settlement on the surrounding landscape at a time when the market gardening industry was expanding and flourishing.

Studies of the landscape of agricultural industry are an English Heritage research priority as studies of the relationship between urban and rural sites are largely unknown in the Midlands and are crucial to the understanding of a society's economy.

## 3 Conclusions

The archaeological and archaeobotanical project has thrown light upon the early development of Abbot Chyryton's Wall, a scheduled ancient monument of national importance. It has also provided regionally and nationally important information relating to the commercial development of horticulture and other local industries of the post-medieval period.

# Part 2 Detailed report

## 4 Aims

The aims of the project fell into three distinct parts.

Firstly, to excavate the pipe trench where it crossed the line of Abbot Chyryton's Wall (HWCM 2821) and to fully record any elements of the wall, or related deposits, encountered. This was to be undertaken by hand to ensure minimum disturbance.

Secondly, to undertake salvage recording on the rest of the pipeline easement to observe any other archaeological remains revealed during groundworks. Exposure of deposits was not determined archaeologically but by Severn Trent Water Ltd.

Thirdly, the environmental analyses were undertaken in order to determine the nature of the surrounding landscape at the time of deposition of the sampled material. The riverine conditions, topography, and extent to which debris from human activity had entered the watercourse was also of interest.

## 5 Archaeological background

The pipeline is located to the west of Evesham (Fig 1), running approximately south to north between the Evesham New Terminal Pumping Station (NGR SP 033 432) and Hampton Park WRW (NGR SP 030 446). For most of its length it runs parallel to the River Avon, along its eastern bank. Adjacent to Avon Nurseries (NGR SP 031 441) it crosses under the river before continuing to its destination on the west bank.

The current landuse varies and includes a rubbish dump, arable, public amenity areas, gardens and a boundary wall. The wall is a monument scheduled under the Ancient Monuments and Archaeological Areas Act 1979 (County Monument number Here and Worc 221). It remains in use as a boundary wall separating Boat Lane from an area of managed grassland used as a car park, caravan site and public amenity area. The soils are of the Bishampton Association, stagnogleyic argillic brown earths, overlying river terrace drift deposits of sand and gravel (Ragg *et al* 1984, 100-2).

The historic and archaeological background has been summarised recently by Dalwood (1995). The evidence for early occupation at Evesham is slight. Late Iron Age and Roman occupation is attested by the presence of artefacts, although the available evidence is not definitive. There is a possible Roman settlement to the north at Twyford Bridge (Roberts 1980, 7; HWCM 2757). Traces of early Anglo-Saxon occupation are limited to the Hampton/Fairfield area to the south-west of the town, on the west bank of the river (Roberts 1980, 10).

In the 11th or 12th century there may have been a thick thorn hedge around the Abbey (Cox 1990; 113). It is not until the abbecy of Reynold de Foliot (*c* 1130-49) that the whole Abbey and the graveyard was enclosed by a wall. A document datable to the priorate of Thomas of Marlborough (*c* 1218-29) suggests that part of the graveyard wall fronted the modern Vine Street, and ran towards the main gate of the Abbey (HWCM 567) in the modern High

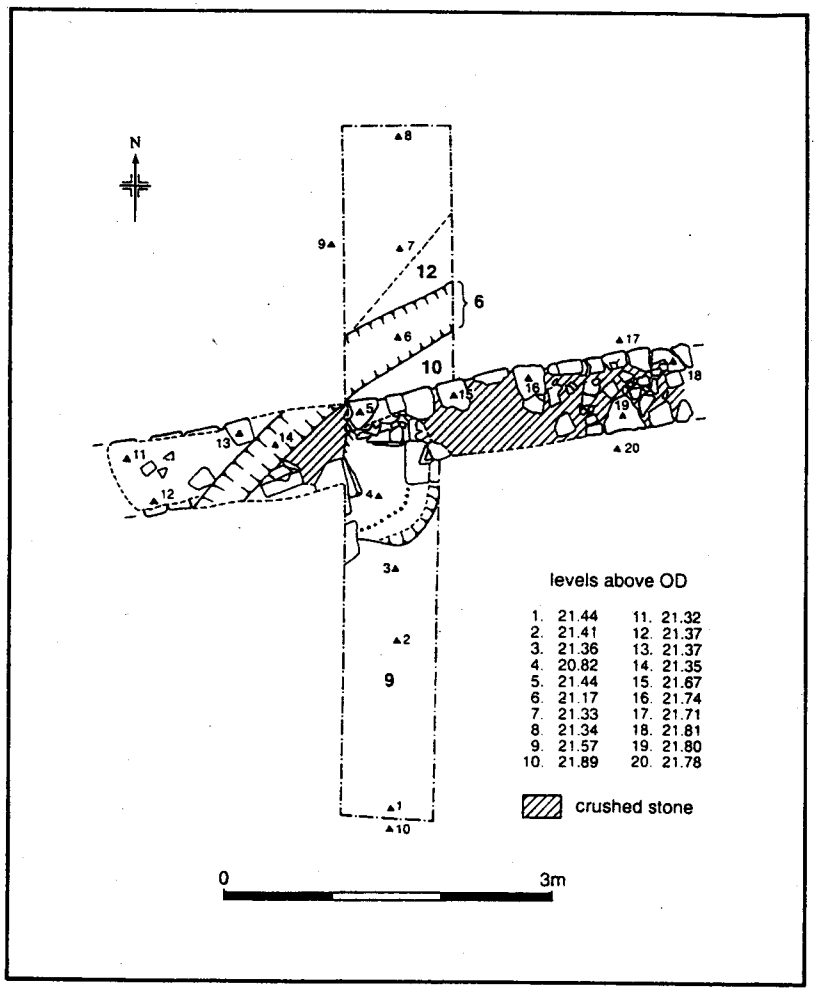


*Figure 3: Plan of features at Abbot Chyryton's Wall*

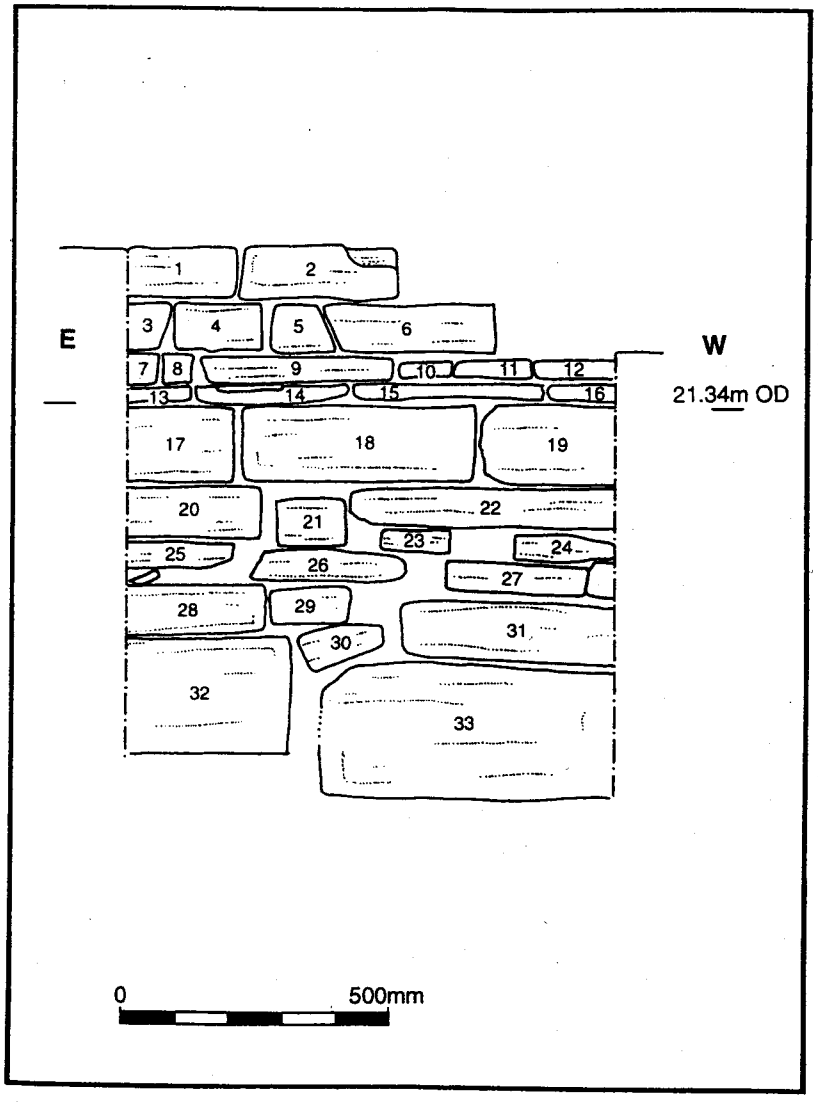


*Figure 4: Elevation of Abbot Chyryton's Wall*

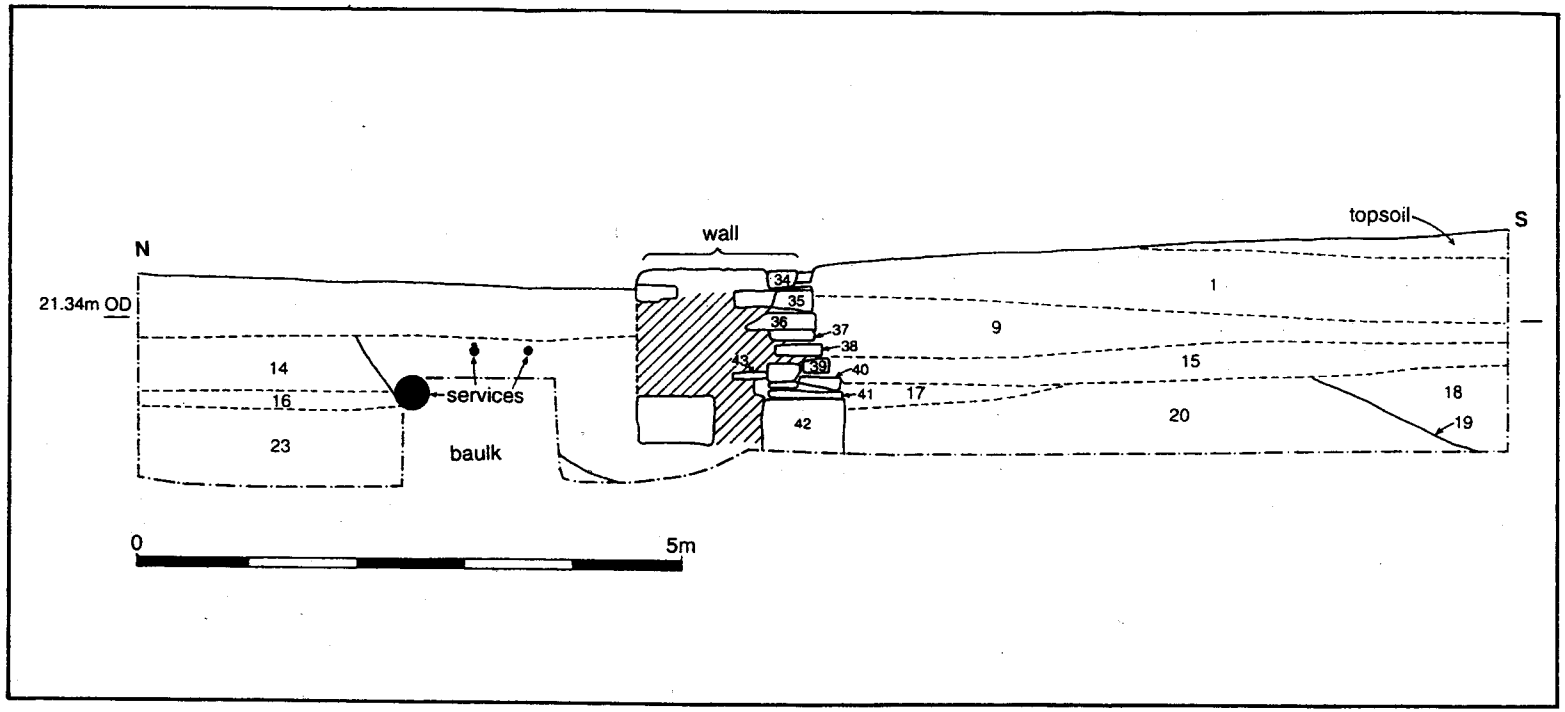


*Figure 5: Section of trench at Abbot Chyryton's Wall*

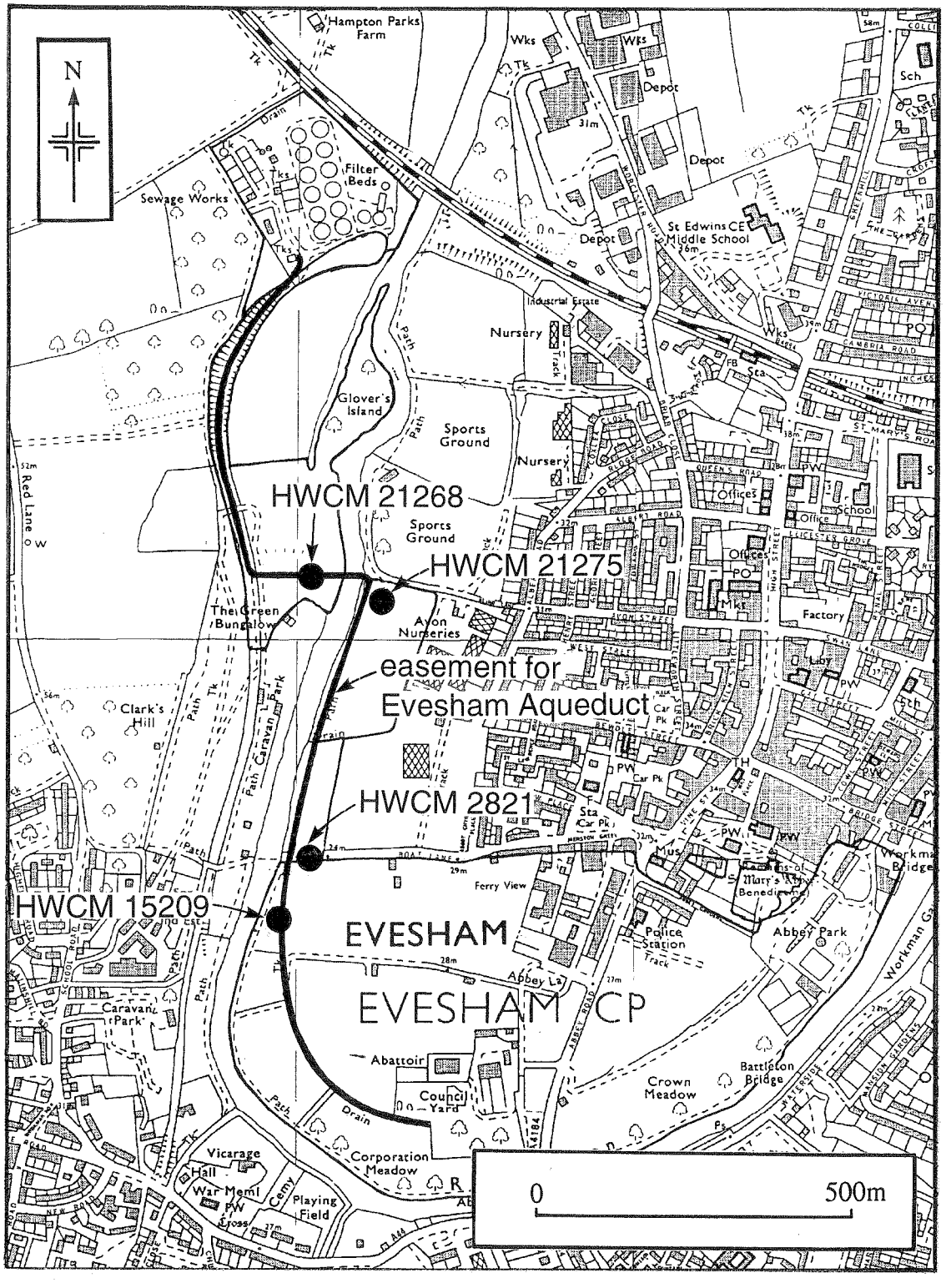


*Figure 2: Fieldwork locations*

Street. Between 1316 and 1334 Abbot William of Cherington built a wall (HWCM 2821) from the Barton Gate (HWCM 4560) as far as the River Avon, in order to protect the Abbey on that side. It was presumably built at the same time as the Barton Gate, or later, and seems to be referred to in the king's licence to crenelate of 15th March 1336. This permitted the abbot to 'fortify and crenelate the aforesaid abbey with a wall of stone and lime' (Cox 1990). This wall seems to have enclosed what may be regarded as the outer precinct of the Abbey. To the east, the location of what is known as Abbot Reginald's Wall (HWCM 575) is more enigmatic. Recent research (Dalwood 1995) suggests that the area of land (HWCM 20737) occupied by the existing two parish churches, St Lawrence and All Saints (HWCM 564 and 565 respectively) and their respective graveyards was excluded from the Abbey precinct. The adjacent area of land (HWCM 20736) comprising the abbey church and cloisters, the chapter house and other buildings (HWCM 571), the great gatehouse (HWCM 566), the Almonry (HWCM 392), the bell tower (HWCM 566), the monastic graveyard (HWCM 20738) and barns (HWCM 19965) appears to have formed an inner abbey precinct (Hal Dalwood pers comm).

Throughout the medieval period the Abbey dominated the town. After the Dissolution of 1540 the former ecclesiastical buildings were either demolished or converted to other uses. Specifically, the boundary of the Abbey precinct, now known as Abbot Chyryton's Wall (HWCM 2821; Fig 2), clearly survived as the boundary to what, in 1605, was known as The Abbey Park. The eastern part of the Abbey was by this time public open space. In 1975 part of what was presumably a length of the Abbey park wall, lying parallel to the south side of Merstow Green was uncovered during construction of a health centre. The site (HWCM 4565) was visited by Mr A M Hunt of Hereford and Worcester County Museums Service and a report and photograph appeared in the Evesham Journal of 27th February 1975 (Cox 1990).

Between August 1987 and December 1988 a series of photographic surveys and excavations were carried out within the known main precinct of Evesham Abbey as a result of planning conditions imposed by English Heritage (Hughes 1990). Preparatory work, comprising a photographic survey, concentrated on the known site of the northern precinct wall, known as Abbot Reginald's Wall, presumed to be that built by Reynold de Foliot. Three trenches were subsequently excavated adjacent to the projected line of the wall revealing that the original wall was founded on pitched stone footings using a dry-stone walling technique. The coursing survived to five or six tiers (HWCM 6005). The width of the wall was found to be 1.60m, with the footings extending this width to at least 2.00m. A photographic survey of part of the existing line of Abbot Chyryton's wall (HWCM 2821) was also undertaken (Hughes 1990).

In July 1995 the County Archaeological Service was requested to undertake a rapid survey and make a record of the works being undertaken by Wychavon District Council on behalf of Severn Trent Water Ltd. These works involved the construction of a new reception chamber and the connection to it of a pipe. During these works, which were undertaken without scheduled monument consent, part of the scheduled ancient monument known as Abbot Chyryton's Wall was damaged. The damaged area and exposed sections of the wall were recorded and a watching brief was carried out during the course of the construction works. In addition, an annotated plan of the entire upstanding length of the wall to the west was made to facilitate future management of the

monument (Mike Napthan pers comm).

# 6 Methods

## 6.1 Fieldwork

### 6.1.1 Excavation strategy

Fieldwork took place between 24th June and 29th November 1994. The affected part of Abbot Chyryton's Wall was cleared of vegetation, cleaned and photographed with a medium format camera. A plan of the visible stone at ground level was then drawn.

A single trench was excavated on the line of the pipe trench (Fig 3) and the deposits either side of the wall were excavated. All deposits were excavated by hand. Recording followed standard practice (County Archaeological Service 1993, as amended). The north face of the wall was then photographed and its elevation drawn at a scale of 1:10 (Fig 4). All the stones comprising the face of the wall were numbered, labelled, removed and stored for replacement. The southern wall face survived only in a fragmentary condition and it was not possible to draw an elevation similar to the northern face. Consequently, after removal of the northern wall face the eastern section was cleaned and drawn at 1:10, the remains of the southern wall face being recorded on this section. A mortar sample was taken to assist the contractor in the reconstruction.

Excavation was then completed to the natural subsoil. Subsequently the trench was excavated to depth by the pipeline contractors. During this period the wall to either side of the trench was protected and archaeological monitoring was maintained to ensure that the wall was not disturbed. Upon completion of the pipe laying, the wall was reinstated by a specialist contractor using the original marked stones as far as possible and using a mortar mix designed to match the original.

### 6.1.2 Salvage recording strategy

Elsewhere, project methodology was based on practice established elsewhere in the County (Dinn and Hemingway 1992). The easement was examined during or shortly after stripping of the topsoil and artefacts were collected from the surface and spoilheaps. The location of these was noted where higher than average quantities of finds were recovered to enable plotting of any concentrations present. Otherwise they were located to individual fields only. Where buried remains were present they were investigated and, in one case (HWCM 21275), the contingency was implemented.

### 6.1.3 Structural analysis

Structural analysis was effected through a combination of structural, artefactual and environmental evidence. A phased stratigraphic matrix was produced for the excavated trench across Abbot Chyryton's Wall.

## 6.2 Artefacts

### 6.2.1 Artefact recovery policy

The artefact recovery policy was as defined in the County Archaeological Service recording system (1993 as amended). This in principle determines that all finds, of whatever date, must be collected.

### 6.2.2 Method of analysis

All hand-retrieved finds were examined. A preliminary record was made of all finds using the Context Finds Record sheets (AS8).

Artefacts were identified, quantified and dated to period. Where possible, a *terminus post quem* date was produced for each stratified context. This date was used for determining the broad date of phases defined in the site sequence.

Pottery fabrics are referenced to a fabric series maintained by the Service (Hurst and Rees 1992, 200-9).

## 6.3 Environment

### 6.3.1 Environmental sample recovery policy

Riverine deposits visible in section in the pipeline trench were described in detail on-site and sampled for further analysis of environmental remains.

In July 1994, large animal bone was hand-collected during monitoring and samples of 10 litres taken from an organic layer (103), provisionally dated to the post-medieval period. An undated shell-rich layer (104) was sampled for analysis of macrofossils. In March 1995, when the reception pit for pipe-jacking underneath the River Avon was excavated, a continuation of the stratigraphy observed in the pipeline trench was revealed. A visit to inspect this stratigraphy was subsequently made with James Greig of Birmingham University. Monolith samples were taken from the organic layer for pollen analysis, and an additional 10 litre bulk sample was taken for analysis of insect and mollusc remains.

The provisionally dated organic layer was selected for assessment and analysis. Bulk samples were processed at the County Archaeological Service for plant macrofossils by Elizabeth Pearson and at Birmingham University by David Smith for insect and mollusc remains. Monolith samples were also processed at Birmingham University by James Greig for pollen analysis.

### 6.3.2 Method of analysis

### 6.3.3 The plant macrofossils

A 2 litre sub-sample of the organic layer was processed by wet-sieving to 300 µm in order to recover material such as small plant remains. The processed material was scanned using a low-power EMT light microscope. The remains were identified using modern reference specimens housed at the County Archaeological Service and the abundance of each taxon estimated. Results of the analysis are summarized in Table 2.

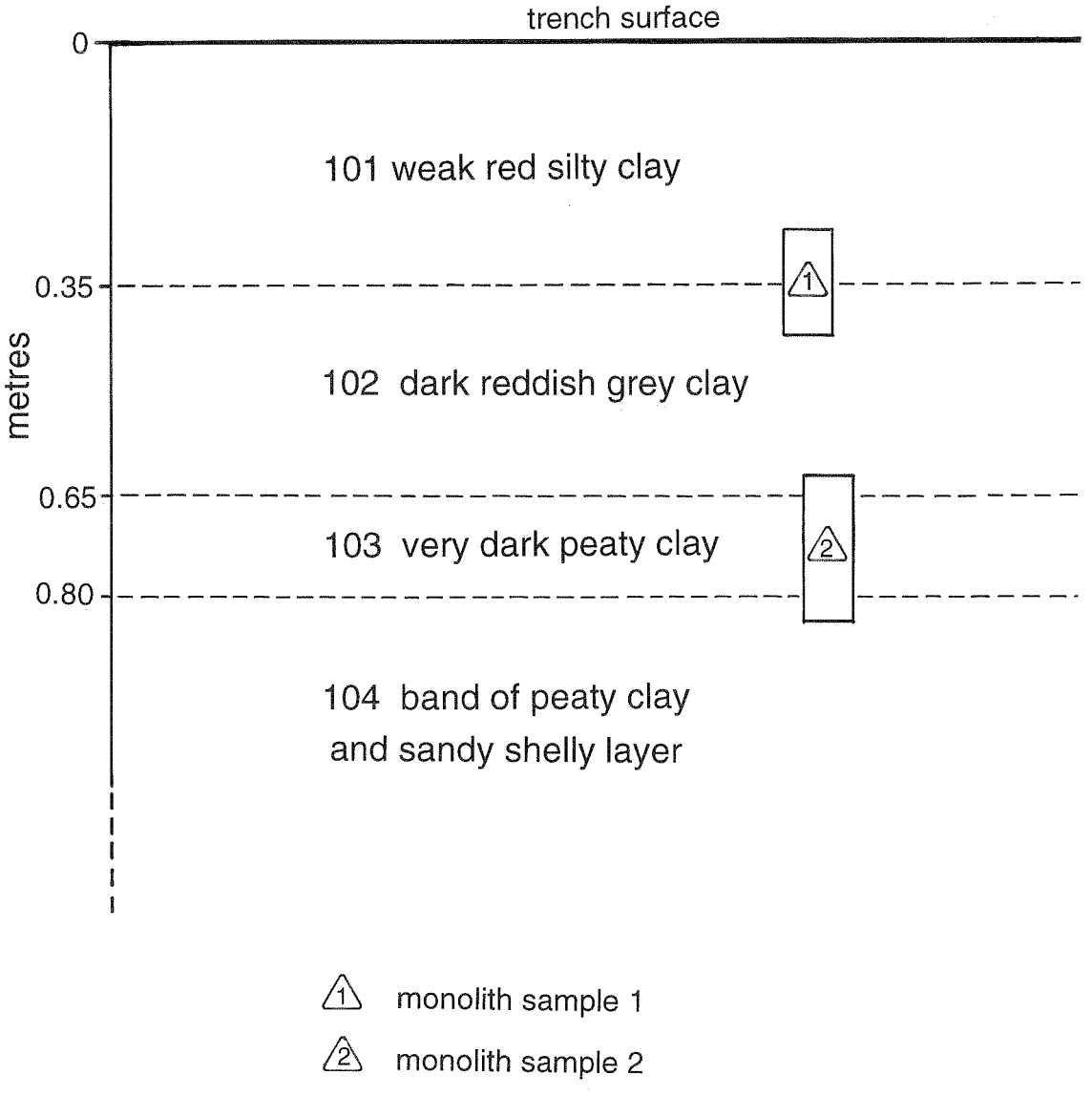


*Figure 6: East facing section of pipe trench (HWCM 21295) showing position of monolith samples*

For the purpose of this assessment the identification was confined substantially to the seeds. Although stem, leaf, twig and thorn fragments were present, identification of these was not considered to be a justifiable exercise.

### 6.3.4 The pollen

Two sample tins were used to collect material from 0.86-1.36m beneath existing ground level. Pollen samples from the top (0.86m), middle (1.11m) and bottom (1.36m) were prepared. The material was disaggregated with sodium haxametaphosphate solution, sieved through a 70µm mesh and on a 10µm mesh. The organic fraction was separated from the inorganic by swirling on a watch glass. The material was acetolysed, stained and mounted with glycerin jelly. Small counts were made to show the pollen count qualitatively, and to indicate whether the deposit was uniform or stratified.

### 6.3.5 The insect assemblage

*Collection*
A single sample of material was collected from HWCM 21295 (Fig 1) from between 0.93 and 1.23m beneath existing ground level by Elizabeth Pearson and James Greig. This consisted of a layer of organic material (103) which contained large fragments of twigs, mussel shells and fragments of bones.

*Processing.*
Approximately 9 kg (or 12 litres) of this material was processed using the standard method of paraffin flotation (Kenward *et al.* 1980). The relatively large number of Coleoptera remains picked out of this flot were identified by direct comparison to the Gorham collection of British Coleoptera housed at the Department of Ancient History and Archaeology, The University of Birmingham. The list of those species recovered is shown in Table 4. The taxonomy used follows that of Lucht (1987). The results from both this study and the initial assessment of this material have been combined since they were derived from the same sample.

### 6.3.6 The mollusc assemblage

*Collection*
Nine kilograms of residual material from the insect analysis were analysed for mollusc remains.

*Processing*
The bulk sample consisting of woody detritus, sand and abundant shells was dried at about 30° C. As many shells were broken and there were numerous bivalves visible, the flotation technique normally employed could not be used successfully here. Instead the dried sample was hand-sorted and all molluscs removed. Unidentifiable fragments were ignored.

A minimum of 2560 molluscs were recovered. These were identified using a reference collection and the keys of Macon (1977) and Cameron and Redfern (1976) and other books containing plates of various species. Nomenclature for the aquatic molluscs is from Kerney (1976), whilst for terrestrial species Cameron and Redfern (1976) was used. Juvenile and adult gastropods were separated by the number of whorls present on an individual; the rationale for separation being to see if the assemblage was in any way biased by contemporary hydrological conditions or by post-mortem chemico-physical

changes in the sediment during burial. The species of *Pisidium* were not identified to species level because appropriate references were not available. However, at least three different types were present.

# 7 Analysis

## 7.1 Excavation at Abbot Chyryton's wall (HWCM 2821)

### 7.1.1 Phase 1 - Natural deposits (Fig 7)

A layer of grey-green slightly silty clay was ubiquitous through the trench, overlain in places by a layer of alluvium (context 023).

### 7.1.2 Phase 2 - Pre-14th century (Fig 7)

A ditch (context 19; Fig 5) was excavated. This subsequently became filled with a silty clay (context 18), possibly of alluvial origin.

### 7.1.3 Phase 3 - 14th century (Fig 7)

A construction trench (context 21) was excavated within which a wall (contexts 2 and 4; Figs 3 and 5) was built. The northern face of the wall, as revealed in the pipe trench, consisted of five courses of varying thickness of faced, rectangular, mortared stones (Fig 4). Below these were four or five interrupted courses of roughly faced rectangular stones. The wall survived to a depth below existing ground level of 1.02m.

The mortar was a light, orangey-yellow, sandy, lime mortar which survived best in the internal crevices of the wall. The construction trench appears to have received a scatter of small stone fragments and mortar (context 11) from the construction of the wall before being backfilled (context 10).

To the north of the wall was a cambered gravel surface (context 16; Fig 5) which was probably the surfacing for an earlier extra-mural track or road on the line of the existing road, Boat Lane. To the south of the wall was a deposit of small stone rubble (context 17; Fig 5), probably from the construction of the wall.

### 7.1.4 Phase 4 - 14th to 16th century (Fig 7)

A thick layer of alluvium (context 9) developed over the fill of the Phase 2 ditch. A layer of alluvium to the north of the wall (context 14; Fig 5) overlying the gravel track (context 16) is probably contemporary with the alluvium described above (context 9).

### 7.1.5 Phase 5 - mid 20th century (Fig 7)

A large posthole (context 8; Fig 3) was cut through the southern side of the wall. A trench for services (context 6) was cut to the north of the wall, through the gravel track (context 16).

### 7.1.6 Phase 6 - later 20th century (Fig 7)

Another service trench (context 13; Fig 3) was cut to the north of the wall.

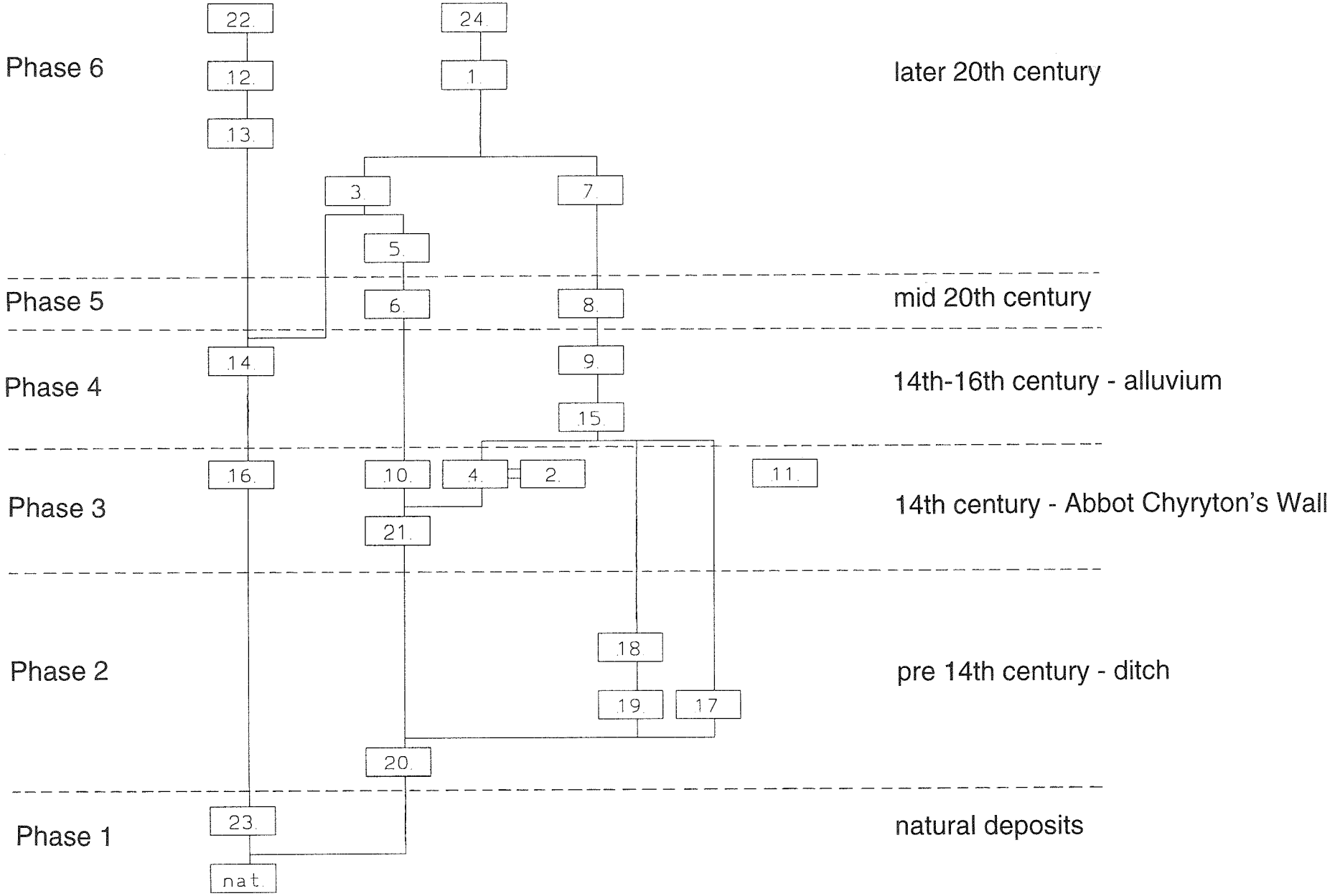


*Figure 7: Strategraphic matrix of Abbot Chyryton's Wall and associated deposits 's*

Tarmacdam (context 22) was laid on the line of the extra-mural track to form the existing modern road.

## 7.2 Finds analysis

### 7.2.1 Finds from the excavation at Abbot Chyryton's Wall

*Roman finds*
A single Roman sherd of black burnished ware was recovered from context 23. In the same context there was a ceramic fragment which may have been from a tile. It was difficult to date, although the light streaks within the clay suggested a post-medieval date.

*Medieval finds*
There was only a single, although fairly substantial sherd, from context 20, which could be dated to the medieval period. It was a rod handle in what appeared to be 'Deritend ware', dating to the 13th-14th centuries. There was a second sherd, from context 16, which was a small slipped sherd of possible 16th century date and is thought to be intrusive.

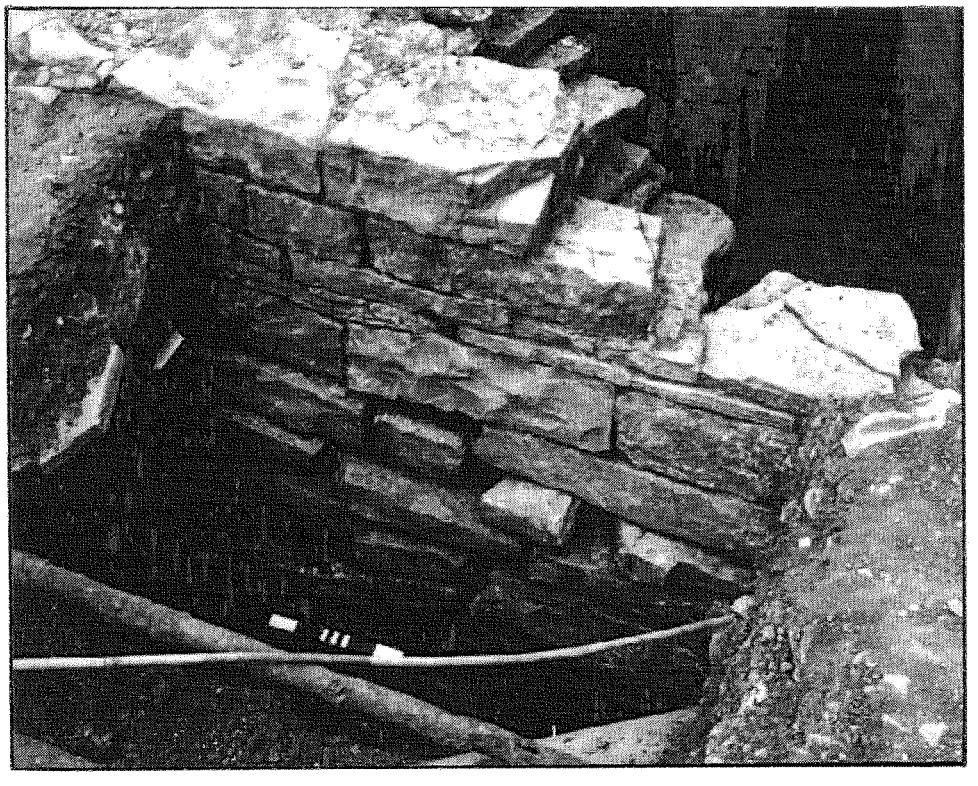

*Figure 8: Photograph of elevation of Abbot Chyryton's Wall*

*Post-Medieval finds*
The post-medieval pottery dated from the 18th-20th centuries. The clay pipe is most likely of 18th century date.

Although a small quantity of stratified finds were recovered these were mainly from the alluvium and will be of limited use in the dating of the wall.

*Figure 9: Photograph of rubble core of Abbot Chyryton's Wall*

## 7.3 Archaeological salvage recording analysis

### 7.3.1 HWCM 15209

Two stone-lined and capped channels were recorded running almost at right angles to the river (Fig 2). These were rectangular in section and constructed of limestone. Mortar was present, although it did not relate to the construction of the channel, and suggests that the stone for these features was robbed from another structure. This may have been the adjacent abbey precinct wall.

*Finds from HWCM 15209*
These were all unstratified in the topsoil overlying the channels.

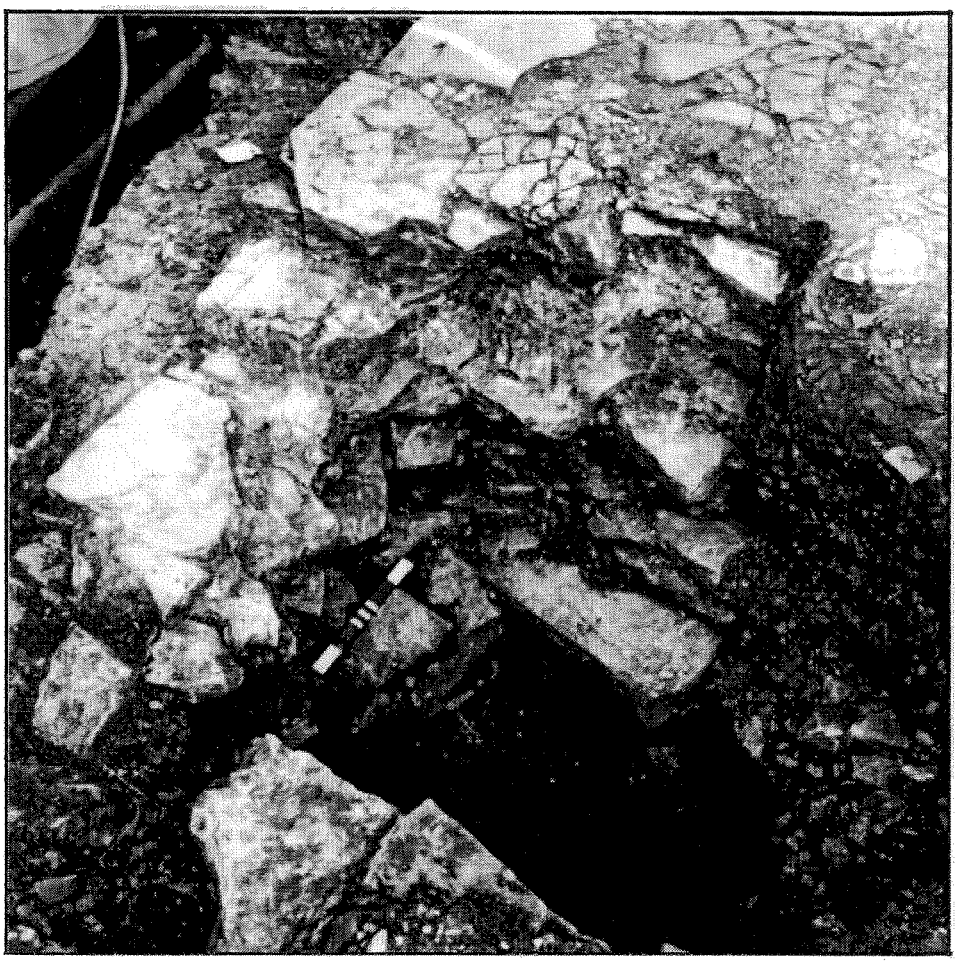

*Figure 10: Photograph of modern posthole cut in south face of Abbot Chyryton's Wall*

The Roman pottery consisted of five small sherds of Severn Valley ware (Fabric 12) of indeterminate date and form.

The medieval pottery was made up mainly of oxidised Malvernian wares (Fabric 69) of 14th-15th century date. In addition there was a single sherd of Worcester type cooking pot (fabric 55), of 12-13th century date and a sandy pink sherd of non-local manufacture, possibly either from Chilvers Coton or from the Boarstall-Brill kilns.

The post-medieval pottery appeared to be of 17th-18th century date. Of interest was a possible blackware handle, possibly modelled in the form of an eagle's wing. The clay pipe bowl was fragmentary and consequently difficult to date. The ceramic building materials, also undiagnostic, could be quite modern.

### 7.3.2 HWCM 21268

A structure comprising two brick aprons (Fig 12), flanking a shallow brick trough was recorded adjacent to a former river channel to the north of the caravan park on the west side of the River Avon (Fig 2). It is thought to be a

dip for the feet or lower legs of animals. It would have been used in combination with hurdles to encourage the animals to step through it. From the appearance of the bricks, it may be dated to the later part of the 19th or earlier 20th century (pers comm Mr P Brigdon, MERL).

*Finds from HWCM 21268*
No finds were recovered from this area.

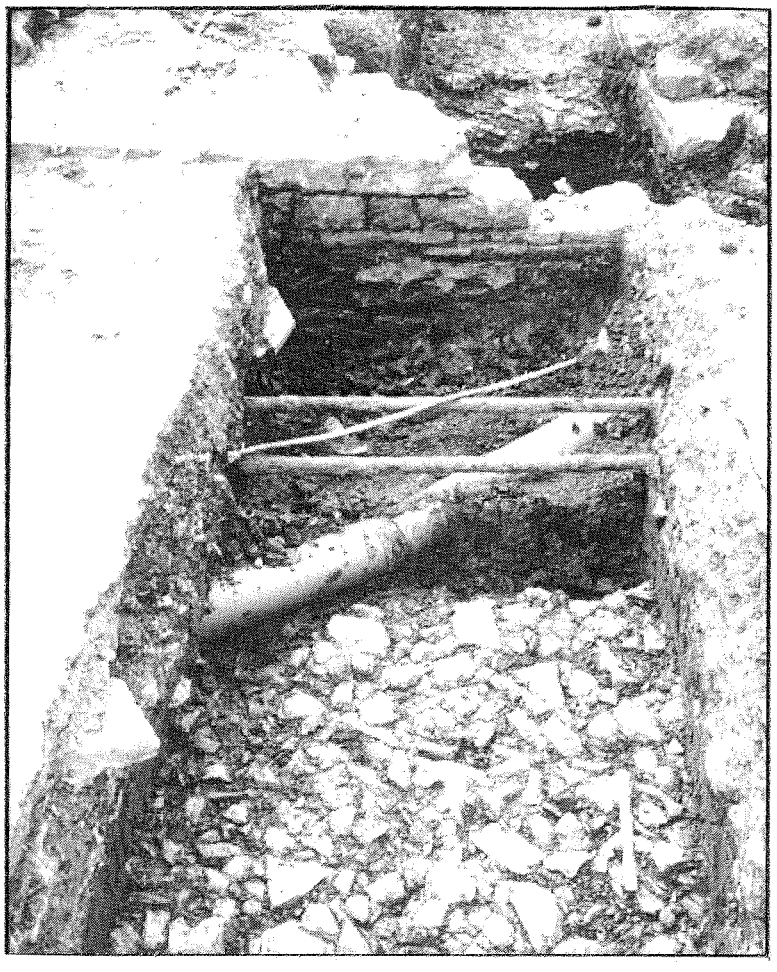

*Figure 11: Photograph of road surface to north of Abbot Chyryton's Wall*

7.3.3 **Other areas**

Small quantities of unstratified finds dating to the post-medieval period were recovered from HWCM 21266.

No features of archaeological interest or any finds were observed in HWCM 21629 or 21270.

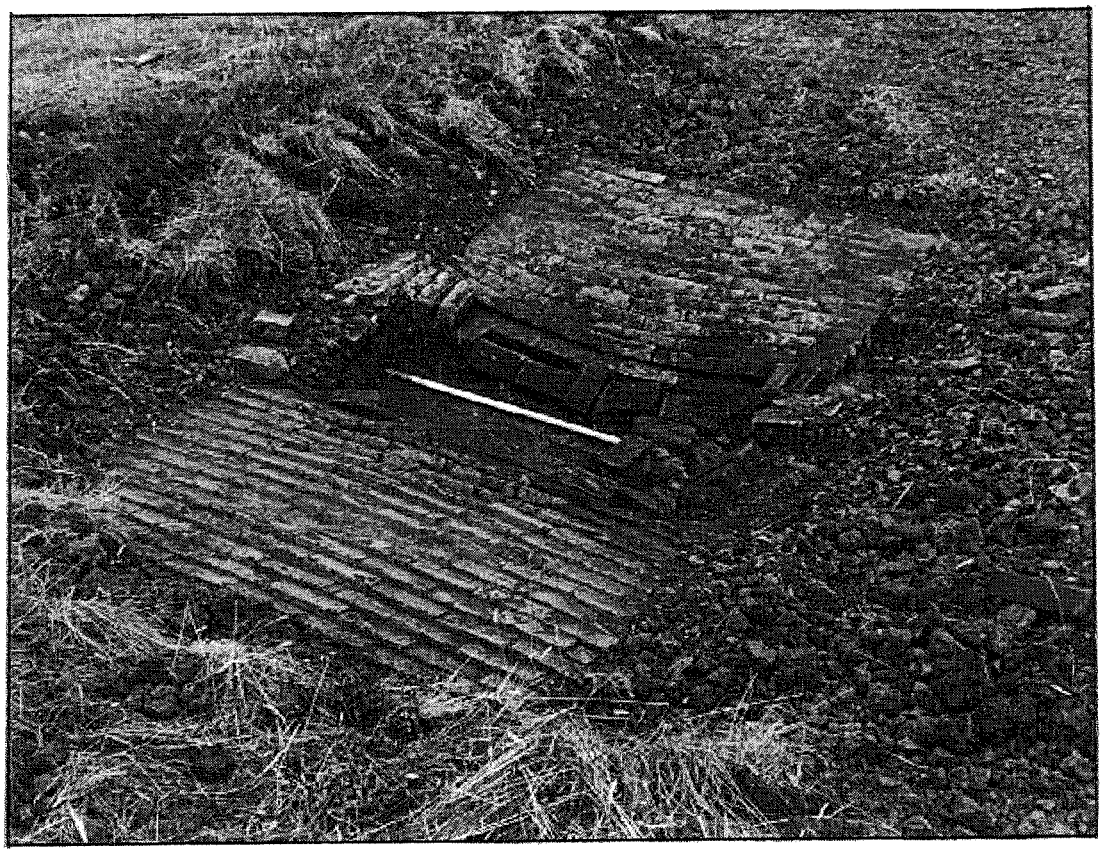

*Figure 12: Photograph of animal dip*

*Finds from other areas*
From HWCM 21242 came three pottery sherds dating from the 17th-18th century.

From HWCM 21266 came post-medieval pottery of 18th-19th century date. The ceramic building materials are undiagnostic and undateable, except within a broad post-medieval category. The vessel glass was a seal from a bottle. The seal depicted a coat of arms and bore a partly decipherable legend. The seal is from a bottle of German mineral water, 'Pyrmont Water' of a type popularly imported into Britain in the 18th century (Ashurst 1970).

The results of the structural analysis are presented in Table 1, with Tables 2 and 3 considering artefact and environmental results respectively.

## 7.4 Environmental study (HWCM 21295)

### 7.4.1 Site description

The most significant remains recorded, other than those associated with Abbot Chyryton's Wall, were clearly defined layers of river sediments observed in the pipe trench section during monitoring, close to the river crossing. The lowest layer (context 104), visible approximately 2m below the existing ground surface, consisted of bands of peaty clay and sandy gravel rich in

molluscs. Overlying this material was a layer of dark grey brown peaty clay, containing organic matter (context 103). This organic matter was fibrous in consistency, containing wood, twigs, and other decayed organic material. Inclusions of coal, large mammal bone, fragments of leather shoe, and molluscs (particularly mussels) were also present. These deposits were sealed by two layers of alluvial clay (contexts 102 and 101). The former was a dark reddish grey clay and the latter a buff coloured silty clay.

The layer containing the organic material (context 103) has been provisionally dated to the post-medieval (17th century) period on the basis of the shoe leather. This layer was extensively sampled and has been the main focus of the post-fieldwork assessment, since it is the richest in remains and can be dated. Environmental samples were taken for plant macrofossils, pollen analysis, insect and molluscan remains (see below). Large animal bones were also recovered but the assemblage was too small to warrant detailed analysis.

### 7.4.2 Analysis of the plant macrofossils

The predominant component of the waterlogged plant remains was seeds of weed species characteristic of disturbed ground and arable fields. For example, redshank (*Polygonum persicaria*), campion (*Silene* sp), common nettle (*Urtica dioica*) and broad-leaved dock (*Rumex obtusifolius*) were present. Species more specifically associated with cultivation were sainfoin (*Onobrychis viciifolia*), which is often a relic of cultivation, and a cultivated *Brassica* species. The latter includes, for example, cabbage, turnip, swede and cole. These plants may have been growing on the disturbed river banks, but it is more likely that they originate from organic waste dumped in, or at the side of the river.

The marshy bankside habitat expected at this location was not well represented, although pondweed (*Potamogeton* sp), sedges (*Carex* sp), club rush/bulrush (*Scirpus maritimus/Schoenoplectus* sp) and willow (*Salix* sp), were present in low numbers. Willow has also been found further upstream at Port Street, Bengeworth (Napthan *et al* 1994).

Amongst the other remains present, was one seed of teasel, identified as the wild species (*Dipsacus fullonum*) according to criteria described in Hall (1992). The cultivated form, fuller's teasel (*Dipsacus sativus*) was commonly employed in the textile industry for raising the nap on woollen cloth. This process was common in Evesham from the medieval to post-medieval period. The seeds of both species are normally distinct. However, the author (Pearson) has noted seeds of both types from a seed head of fuller's teasel, which may indicate some hybridization of the species (Alan Hall pers comm). This point is worthy of note here as two fuller's mills are documented in Bengeworth, Evesham in the late 16th century (Dalwood 1995) and may be the source of any teasel seeds found in the locality.

Within this layer, although remains of aquatic and marshland plants are not particularly dominant, it is likely, (considering the location) that the deposit formed initially in an area of reed beds, sedges and willows. Nevertheless, the leather and bone collected from this deposit suggests that organic refuse was also being disposed of here. The seeds of wasteland or arable weeds and cultivated *Brassica* are likely to originate from considerable quantities of organic waste, probably crop waste.

7.4.3 **Assessment of the pollen**: James Greig

The pollen results are given in Table 3. Samples from the top and bottom of the peaty clay deposit provide results that are very alike, showing that the deposit may represent a single event. The following componants of the pollen assemblage were identified:

*Trees and woodland*
There are modest records from a range of trees and shrubs, showing that the surroundings were not heavily wooded.

*Grasslands*
Characteristic grassland taxa include *Plantago lanceolata* (ribwort) and *Centaurea nigra* (knapweed). Other taxa, such as Lactuceae and Poaceae, may have come from grassland vegetation, although they also grow in many other habitats.

*Arable land, cultivated plants and weeds*
There is a substantial record of both *cerealia* (cereal) pollen and *Cannabis*-type (hemp or hops). A single grain of *Linum usitatissimum* (flax) was also found. The large amounts of pollen from cereal and possible hemp, together with the flax, are likely to derive directly from debris of these crops, rather than pollen transported by natural means from crops growing in surrounding fields. Hemp finds are often interpreted as indicating the presence of retting pits, in which hemp was soaked in water as a stage in its processing for fibre. Moreover, this retting process was also applied to flax, although the latter gives only a very slight pollen record. Retting sites are known from elsewhere on the River Avon, for example, at Wasperton (James Grieg pers comm).

Weed pollen included *Centaurea cyanus* (cornflower) suggesting that the material is medieval or later in date.

*Wetland and aquatic vegetation*
This was indicated by moderate pollen records, suggesting a component coming from the River Avon as might be expected.

*Other pollen types*
These include, for example, the cabbage family (Brassicaceae) which could represent taxa in a range of different habitats. Plant macrofossils may provide more detailed information on the taxa present.

*Conclusions*
The preliminary results show that the deposit may have been a retting site for hemp and flax, or that it was a deposit of organic rubbish. The pollen evidence is discussed in detail below, together with that from the plant macrofossil and insect analyses, for an integrated interpretation.

7.4.4 **Analysis of the insect remains**: David Smith

*The surrounding environment.*
The insect fauna included both aquatic and terrestrial species. The majority of the terrestrial insects present suggest that there was wet meadowland or pasture in the area. Amongst the beetles, which are indicative of this landscape, are the large numbers of *Apion*, *Sitona*, and *Hypera* species. These

genera feed on common meadowland plants such as *Trifolium* (clovers) and the *Medicago* (medicks). Another species which is found in grassland is *Gastroidea viridula* which feeds on *Rumex* (dock), as do many of the species of *Gymnetron.*

A number of other species also have links with pasture or grassland in general but are not tied to any specific host plant. *Phyllopertha horticola* is a common species of Chafer beetle whose larvae feed on the roots of grasses below the ground surface of old pasture (Raw 1957). This behaviour is also common amongst the various species of Elateridae and Troscidae 'click beetles' present (Koch 1989). The specific behaviour of *Barynotus obscurus* is not well understood, but it is commonly found feeding at the base of grasses in damp soils, often in meadowland by rivers (Koch 1992). There is also a suggestion that *Urtica dioica* (stinging nettle) was present in the area. Both species of *Brachypterus* feed on this plant, which is thought to be an indicator of disturbed ground and is common in grassland, particularly in areas where the ground surface has been trampled.

Taken together this suggests that the surrounding area consisted of weedy damp grassland. That this was probably pasture is suggested by a number of taxa which live in dung pats laying in the open field. Although the various species of *Aphodius* and *Geotropes* dung beetles, and the small *Staphylinidae*, *Platystethus arenarius*, can occur in other accumulations of rotting matter, they are more commonly associated with large herbivore dung (Jessop 1986).

There is also some tentative evidence for the presence of market gardens, or vegetable patches, in the area. *Tanymecus palliatus* is the 'beet leaf weevil' and is a common pest on the cultivated species of beet, particularly *Beta vulgaris* (Koch 1992). *Ceutorhynchus contractus* is also a common pest species in cultivated plots. Its larvae are 'leaf miners' which feed on a range of *Brassicaceae*, which include the cultivated cabbages and the turnips (Bullock 1992; Koch 1992). However, it must be remembered that these species will also occur on a range of related wild plants. Some of these species are also common in the herb layer of meadowlands and pastures.

However, it is difficult to assess whether this collection merely represents the situation immediately adjacent to the sampling location or whether this fauna may be more widely applicable. Not only do many of the species recovered fly readily over a large area but may also have been carried down stream by the river itself. The mechanics, and complications resulting from, the introduction of allochthonous (non local and accidentally imported) remains should not be forgotten here (Kenward 1975a; and 1978).

There are only two species present which are associated specifically with trees. These are the *Coeliodes* species which as a genus feed on young deciduous trees. If the species present is *C dryados* then this will be oak (Koch 1992). The second species, *Rhynchaenus alni* is again a leaf minor, and in this case, despite its last name, is particularly associated with elm (Koch 1992). It is probable that these indicate the presence of individual trees within hedgerows, or along the banks of the river, rather than any substantial woodland *per se*. To judge from the relatively low numbers of individuals present that feed on timber, or are associated with woodland, it would seem that the landscape was essentially cleared.

*River conditions.*
The majority of the water beetles present are indicative of slow or still waters, such as ditches ponds and pools. Both the Dysticidae *Graptodytes pictus* and the Hydraenidae *Hydreana testacea* are also species which are typical of slow flowing and plant filled waters, often in amongst thick stands of bankside vegetation (Friday 1988; Hansen 1987). Also present are a number of species of beetle which are indicative of this type of vegetation. Both the leaf beetle *Donacia semicuprea* and the weevil *Notaris acridulus* feed on the stems of the *Glyceria* (sweet grasses). Other species such as the *Throgenes* weevils point to the presence of *Carex* or water reed as well. In amongst this stand of vegetation, and perhaps in the muddier parts of the banksides, there also appears to have been some *Caltha palustris* (marsh buttercup). This is the food plant of both *Hydrothassa marginella* and *Leiosoma deflexum.*

The presence of differing water conditions is perhaps indicated by the relatively large numbers of Dryopidae present. The majority of this family live in relatively clear and fast flowing waters such as upland streams. They often occur under stones in the stream beds or amongst vegetation. They are therefore thought to be indicative of conditions in active fluvial channels rather than those in sedimenting cut-off channels, or in ponds. However, the commonest Elmids seen here, *Elmis aenea*, the *Oulimnius* species and the *Limnius volckmari*, appear to have some tolerance of mud and silts provided this does not form a thick blanket across the whole of the stream bed. *Riolus subviolaceus* is a much less common species (Red Data Book notable B, Hymen 1992) and is today thought to be limited to fast flowing, calcareous rivers with a stony bed (Holland 1972). One species present that appears to be indicative of deeper waters within main river channels, is *Stenelmis canaliculata.* This species is recorded from plunge pools below weirs and in the depths of large rivers on both the Continent and in Britain (Steffan 1979). Today, it is considered to be relatively rare (Red Data Book Class 2, Hymen 1992) and is recorded from only a few lowland river systems. However, work at a number of archaeological sites has suggested that it may have been more common and widely distributed in the past (Osborne 1988; Robinson 1991). It has been suggested that the rarity of this species and the other Elmids in lowland rivers today is a result of post Bronze Age alluviation. The thick blankets of silt in the channel beds that resulted, are not thought to be sustainable environments for the Elmids (Osborne 1988). Indeed, this is the condition of the Warwickshire Avon today.

The presence of these species may therefore indicate that this section of the Avon may have been relatively clear of silt, certainly to a lesser extent than today. How extensive this area was, and indeed if this can be applied to the Avon in general is not clear.

Certainly, the mixing of these two contrasting faunas of water beetles suggests that this material was deposited in a stiller area of water associated with the main channel of the Avon. Elements from the main channel and, inevitably, from further up stream appear to have been periodically washed into this area.

*Evidence of domestic material.*
A small number of species in this fauna are closely associated with human settlements. *Aglenus brunneus* is rarely found outside of human settlement today, and presumably also in the past (Kenward 1975b). In Roman and Anglo-Scandinavian York, it is common in human settlements, particularly decaying house floors and other accumulations of decaying organic matter

(Hall *et al* 1983; Hall and Kenward 1990). *Sitophilus granarius,* the 'granary weevil' breeds in decaying grain in Northern Europe and is therefore limited to human settlement. Although it is possible that this species may have been present in cattle feed and therefore in dung which entered the river in run-off from pasture, it probably along with the *A brunneus*, suggests that domestic rubbish or matter from settlements has entered the watercourse at some point. It is difficult to assess if this represents deliberate dumping of material into the river, or if these are remains washed out of human settlement by accident.

However, both the small numbers of individuals of these species and the lack of others representative of sour decaying vegetable matter, appear to indicate a minimal contribution of this type of material to the deposit. The level of such material is certainly at a much lower level than would be expected if a retting pit or a rubbish dump were present.

### 7.4.5 **Analysis of the mollusc remains**: Andrew Moss

*The surrounding environment*
The assemblage suggests a river or pond margin, probably with reeds or long grasses surrounded by wet grassland.
Only a small proportion of the fauna is non-aquatic. Of these amphibious species such as *Succinea* and *Lymnaea palustris* account for nearly 3.5%. Wetland species (*Vertigo, Vallonia pulchella*) account for 1.5%. Exclusively dryland species (mainly *Vallonia excentrica, Pupilla muscorum*) account for only 2.3% of the total. The balance is made up of species tolerant of a wide variety of environmental conditions, although some (*Trichia hispida* group, *Cochlicopa lubrica, Vitrea crystallina*) prefer wetter habitats.

Robinson (1988) has analysed alluvial assemblages from the Upper Thames, and identifies pasture and meadow assemblages. He suggests that a distinction may be made, based on the number of terrestrial snails present in an assemblage. More than 25% (usually much more) indicating meadow and less than 5% indicating pasture. If this is correct, then this assemblage indicates that there is meadowland adjacent to the water margin but the concentrations of terrestrial snails have been diluted by the large numbers of aquatic molluscs.

The *Trichia hispida* group is the commonest terrestrial taxon found here. These snails prefer damp woodland or grassland. Robinson (1988) records them commonly from meadow environments. The ratio of adults to juveniles present suggests that this may be an *in situ* breeding colony and unlikely to have been deposited far from the source community.

The mixture of *Vallonia pulchella* and *V excentrica* is unusual. Whilst the former may be expected in wetland and meadow, the latter is characteristic of dry grassland. The numbers of specimens found suggests a local source and may represent a drier 'island' habitat within the meadow. The only other dryland species, *Pupilla muscorum*, represented by only two specimens, could easily be accidentally intrusive.

*River conditions*
The predominant componant of the mollusc fauna recovered (over 85%) was entirely aquatic in habitat. The dominant species are *Theodoxus fluviatilis, Bithynia tentaculata, Ancylus fluviatilis, Valvata piscinalis* and *Lymnaea peregra.* All are characteristic of flowing water conditions, although the two

latter species are tolerant of a wider set of conditions than the others. Indeed, *Lymnaea* needs to breath air and thus cannot cope with turbulent water.

The *Planorbidae* family is well represented in the species present. All of the species recovered live in a wide range of habitats, from river margin to ponds, but all prefer slow-flowing or still water with abundant weeds. Taken as a whole, the aquatics consist of main channel and river margin species. The differences in flow are also indicated by the beetle record from this site. Again, the ratios of adults to juveniles would suggest that little transportation of the communities has taken place. As there was much variety of size and shape of mollusc, the implication is that no differential current sorting has taken place.

### 7.4.6 The animal bone

*Assessment of animal bone*
A total of 4.8kg (41 fragments) of large mammal bone was hand-collected during monitoring and sampling of riverine deposits from contexts 103 and 101. With the exception of a complete skull of a medium size dog, all the bones recovered were of large domestic animals. These included large ungulate, cow, sheep or goat and pig. The majority of the bones were long bones (some with butchery marks), although bones from other parts of the carcass, such as the skull (cattle horncore and pig tusk), sheep or goat pelvis and the foot (cattle phalange) were also present. The assemblage is too small to merit further analysis.

### 7.4.7 Finds from the environmental study (HWCM 21295)

Only one find, a sherd from a possible 13th century Malvernian cooking pot, could be definitely identified as medieval.

Other than a single sherd of pottery of 17th-18th century date, the only other material which could be tentatively dated to the post-medieval period were the pieces of waterlogged leather. Some of these (eg off-cuts and possible strap fragments) were not closely datable. However the shoe fragments, since they were of welted construction, are unlikely to date to before the 15th century and are most likely to be later than this.

## 8 Discussion

### 8.1 The excavation

The outer precinct of Evesham Abbey was largely an area of gardens, orchards and buildings associated with agriculture and horticulture (Bond 1973, 41-2) within the meander of the River Avon. The northern limit of the princinct appears to have been defined originally by the course of a ditch (context 19), recorded a short distance to the south of the later wall and running at an oblique angle to it. Further to the east a feature, thought to be the same ditch, was recorded adjacent to the wall on its north side. This part of the ditch clearly underlaid the wall construction (Mike Napthan pers comm). The ditch may have been reinforced as a boundary by the thick thorn hedge mentioned in documents of the 11th or 12th century (Cox 1990). Subsequently, the medieval precinct wall associated with Abbot Chyryton, was built on a slightly different alignment in the early 14th century (HWCM 2821). The construction trench

for the wall (context 021) was identified, within which the wall (contexts 2 and 4; Figs 3 and 4) was built. Below ground level the surviving northern face of the wall (Fig 4) comprised four or five basal courses of roughly faced rectangular stones surmounted by five courses of faced, rectangular, stones.

To the north of the wall was a cambered gravel surface (context 16; Fig 5) which was probably the surfacing for an earlier extra-mural track or road on the line of the existing road. This may have led to a ford or ferry on the site of the existing river crossing to give access to the fields on the west side of the river, which the monks are reputed to have cultivated.

Between the 14th and 16th centuries a thick layer of alluvium (context 9) was laid down. In the mid to later 20th century a large posthole, for a telegraph pole (context 8; Fig 3), was cut through the southern side of the wall. Trenches for services (contexts 6 and 13; Fig 3) were cut to the north of the wall, through the gravel track (context 16).

## 8.2 Archaeological salvage recording

*HWCM 15209*
The stone lined and capped channels running at right angles to the river and parallel with the Abbey precinct wall are probably field drains. The presence of mortar, not contemporary with the construction of the drains, suggests that the material for these features was robbed, probably from the adjacent Abbey precinct wall. This implies that by the time that the drains were laid, the wall had ceased to be a formally maintained boundary although it was still a significant feature in the landscape. It may be that these channels were constructed after 1540 when the Abbey was dissolved.

*HWCM 21268*
The structure comprising two brick aprons, flanking a brick trough is thought to be an animal dip which, from the appearance of the bricks, may be dated to the later part of the 19th or earlier 20th century.

## 8.3 The environment (Site adjacent to Avon Nursaries)

*Flood deposits, river and landscape change*
The sequence of river sediments observed at this site reflects its history, which may have been affected by natural processes, such as climatic change or natural succession, but may equally reflect changing human use of the surrounding landscape.

The lower sandy mollusc-rich layer indicates conditions of relatively fast river flow. This type of deposit normally represents various main stream channel deposits (Thornbury 1969). The course of the main river channel appears to have remained the same since at least the 14th century when Abbot Chyryton's wall was built, leading to the present Hampton Ferry crossing. This material is therefore likely to represent deposits of a gradual movement of a meander or a wider river channel pre-dating the 14th century.

The overlying peaty clay must have formed in marshy conditions where water was slow moving, and sediment deposition limited. The analysis of insect and mollusc remains demonstrate that the deposit formed in such an environment but was near enough to the main stream channel to be affected by fast-flowing water. This commonly occurs naturally on the inside of a meander (as is this

situation here).

An alternative cause of the build up of peat is the activites of man. In the 17th century, weirs were built up and down stream and dredging carried-out in order to control river flow (Dalwood 1995). These works may have altered the river's regime and caused pockets of peat to form in favourable circumstances.

Increased sediment deposition resulted in the accumulation of the alluvial layers above. These have been laid down under slightly different conditions. The lower dark grey brown, slightly organic layer is characteristic of reduced conditions (non-oxidized) and slow overbank spill, whereas the buff red clay, containing little organic matter is characteristic of a faster sediment deposition. A similar change in alluvial sediments has been recorded in the lower Severn and Avon valleys (Shotton 1978), which has been interpreted as resulting from forest clearance and increased agricultural activity. Although the change was dated to the Bronze Age to Iron Age period in Shotton's study, at the site adjacent to Avon Nursaries, it is likely to represent a later increase in agricultural activity. As such a change occurred during the post-medieval period when the market gardening industry expanded and flourished, this may, therefore, have been a factor here.

*Fauna and flora, landscape and local industry*
The combined results of the plant macrofossil, pollen, insect and mollusc analysis suggest that the peaty deposit received a considerable input of organic waste (the latter, suggested mainly by the plant macrofossil and pollen evidence). Nevertheless, the extent to which the deposit reflects a natural swampy area or an organic midden is unclear.

There is also evidence of nearby grassland. The insect and mollusc remains specifically indicate wet meadowland or pasture (the latter particularly highlighted by the presence of animal dung-feeding insects). A meadow environment may account for these results as the land is commonly set aside for hay production for part of the year, then opened up for grazing for the remainder of the year.

Evidence of garden crop cultivation is provided by the plant macrofossil, pollen and insect remains. The possible cultivation of crops of the cabbage family (including cabbage, turnip, swede or cole) and beet crops (including beetroot, spinach beet and Swiss chard) is indicated, all of which are known cultivars of the post-medieval period. Moreover, such evidence is especially likely in Evesham as it became an important market gardening region in the post-medieval period.

There were also high levels of Cannabaceae pollen, particularly in the upper part of the deposit. This family includes hop (*Humulus lupulus*) which was used in the brewing of beer, and hemp (*Cannabis sativa*), commonly used for making rope and coarse textiles such as hessian. Although both plants can grow wild, the high levels of pollen present may derive from crop waste dumped at this location. They may also derive from the location being used for retting hemp, but this is thought to be less likely as the quantity and variety of pollens diagnostic of this activity are too low.

There is documentary evidence of a rope making industry in Bengeworth in the late 16th century (VCH II). Six hop kilns in Brick-kiln Street in the

mid-18th century, served a brewing industry which developed in response to the coaching trade, (Dalwood 1995). One seed of cultivated flax (*Linum usitatissimum*), from which linen or linseed oil is made, was recovered. There is documentary evidence that flax was grown alongside the river to the north-east of the town.

There is some evidence for willow, many species of which were planted as an osier. This product would have been used in the construction of buildings for wattle and daub and the making of hurdles, besoms (brooms) and possibly baskets (pers comm David Guyatt). Osier beds are documented further upstream at Port Street, Bengeworth (Napthan *et al* 1994) in the 18th century (Izod VCH III).

The presence of a rare coleoptera (*Stenelmis caniculata*), included in the Red Data Book class 2, is of interest, not only for understanding the development of the British fauna through time, but for understanding changes in river systems which may be man induced. This species is believed to have declined as a result of a considerable build-up of silt and mud in river systems in the early Iron Age. The significance of its presence at this location in such a late period is unclear.

## 8.4 Concluding remarks

The excavation and salvage recording have provided evidence for the early development of the boundary of the Evesham Abbey precinct and the condition of survival of the precinct wall, a scheduled ancient monument. A ditch running at an oblique angle to the wall is probably an earlier boundary for the precinct, possibly associated with a thorn hedge. The precinct wall, now known as Abbot Chyryton's Wall, was built on a slightly different alignment with an extra-mural track contemporary with it on the line of the modern Boat Lane. The precinct wall was probably robbed in the post-Dissolution period in order to provide construction material for field drains and presumably other structures nearby.

Elsewhere, a brick structure built adjacent to a former river channel was probably a late 19th or early 20th century animal dip.

The integrated environmental study has provided valuable contributions to local knowledge. These include changing river regimes, both natural and man-made, and information about local market garden agriculture and industries from the medieval to the post-medieval period.

# 9 Significance

A statement of significance did not form a specific part of this project. However, the project has added substantially to the fund of knowledge upon which any future statements of significance relating to Evesham Abbey and its surroundings will be based. It was therefore felt appropriate to make a statement of significance at this time.

In considering significance the Secretary of State's criteria for the scheduling of ancient monuments (DoE 1990, annex 4), have been used as a guide.

In considering the significance of the environmental study the same criteria

have been used, but in the context of research priorities for environmental archaeology as defined by Carruthers (1993), Grieg (1985), Grieg and Moffett (unpublished) and *Exploring our past* (English Heritage 1991).

These nationally accepted criteria are used for assessing the importance of an ancient monument and considering whether scheduling is appropriate. Though scheduling is not being considered in this case they form an appropriate framework for the assessment of any archaeological site. The criteria should not, however, be regarded as definitive; rather they are indicators which contribute to a wider judgment based on the individual circumstances of a case.

## 9.1 Abbot Chyryton's Wall

*Period*
The majority of post-Conquest monasteries were in monastic use for an extended period up to about 400 years and form just one of the many classes of monument that characterise the period. The monastic precinct boundary formed one component of the total monastic assemblage but one that all such foundations might be expected to possess. Ditches and walls were common forms of boundary throughout the medieval period.

*Rarity*
The monastery is a common form of monument when all types within the class are considered. The greater number of monastic foundations are thought to have had a precinct boundary formed by a ditch, hedge or wall. Abbot Chyryton's Wall is a scheduled monument and therefore considered to be of national importance. The excavation within the pipeline easement, combined with a nearby watching brief, has demonstrated that at least part of the boundary of Evesham Abbey has a hitherto unknown earlier phase. This comprises a ditch, possibly associated with a hedge.

*Documentation*
Relevant archaeological documentation is extensive and includes (apart from this report) at least 20 references quoted in Dalwood (1995). Historical documention has been described as 'no more than average for a place of its size and status in the medieval period' (Dalwood 1995). Documentation is, however, voluminous for the 18th and 19th centuries.

The precinct boundary is recorded in documents of the 11th or 12th century as being formed by a thick thorn hedge (Cox 1990). This may have been reinforced by the ditch recorded by the excavation (this report) and the recent watching brief (Mike Napthan pers comm).

*Group value*
Abbot Chyryton's Wall (HWCM 2821; County Monument No Here and Worc 221) is part of a group of monuments associated with Evesham Abbey (HWCM 566; County Monument No Here and Worc 253). These comprise the main gate of the abbey (HWCM 567), the Barton Gate (HWCM 4560), the great gatehouse (HWCM 566), Abbot Reginald's Wall (HWCM 575), Abbot Reginald's gateway and old vicarage (HWCM 1285; County Monument No Here and Worc 254) the abbey church and cloisters (HWCM 20736), the chapter house and the eastern range of claustral buildings (HWCM 571), the bell tower (HWCM 566), the barns (HWCM 19965), the monastic graveyard (HWCM 20738), parts of the abbey precinct (HWCM 6005, 15209 and 20736)

and the Almonry (HWCM 392). The wall is thus of high group value.

*Survival/condition*
When built, monasteries were composed primarily of above ground structures, with their limits defined by the precinct wall or ditch. The excavation and watching brief (Mike Napthan pers comm) has determined that the precinct wall was preceded by a ditch which survives as a substantial below ground feature in two widely separated locations. Above ground, the precinct wall has clearly been repointed and rebuilt on many occasions, not always sympathetically with its status as an ancient monument. However, the excavation has shown that below ground its integrity as a medieval structure remains uncompromised, even where it no longer survives as a standing monument.

*Fragility/vulnerability*
Although the wall still remains a substantial feature in the modern landscape its position on the side of a narrow lane, used extensively by modern traffic, renders it vulnerable to damage. In addition, the wall is not of uniform height and some parts of it are easily climbed. Recent use of the adjacent field for 'car boot sales' has resulted in accelerated attrition of parts of the fabric. In areas where the wall is no longer a visible feature above ground it is subject to inadvertant damage by adjacent construction works, such as that resulting in the watching brief refered to elsewhere (Mike Napthan pers comm).

## 9.2 The environmental study

*Period*
In the post-medieval period environmental studies are a much neglected area, both regionally and nationally. This period offers considerable potential for the study of garden and orchard crops and possibly the development of varieties, as this is the period when the commercial development of horticulture became important (Grieg and Moffett unpub). The change in alluvial sediments recorded at site adjacent to Avon Nursaries is likely to represent an increase in agricultural activity. Such a change occurred during the post-medieval period when the market gardening industry expanded and flourished. Evidence of garden crop cultivation is provided by the plant macrofossil, pollen and insect remains. The cultivation of crops of the cabbage and beet families are indicated, all of which are known cultivars of the post-medieval period.

*Rarity*
The environmental deposits occur in an area that has been peripheral to a small market town since the middle ages. The deposits may therefore have implications for both urban and rural studies.

In an urban context, there are few sites with a significant source of waterlogged environmental material in middle England for comparison. The site adjacent to Avon Nursaries is therefore a high priority (Grieg and Moffett unpub). The few studies of plant macrofossils from small, market towns that have been carried out indicate that the economy may differ from that of larger urban centres. Further work is required in these small towns to clarify their position within local trading networks (Carruthers 1993).

In a rural context, environmental studies are a priority nationally as well as regionally because of their rarity (Grieg and Moffett unpub). Rural sites that can greatly benefit from detailed archaeobotanical studies are those associated

with cloth-making and other industries, where waterlogged deposits are preserved. The high levels of Cannabaceae pollen, particularly in the upper part of the deposit at HWCM 21295, suggest the brewing of beer, or use of hemp in the textile industry. Cultivated flax, from which linen or linseed oil is made, was also found.

The presence of a rare coleoptera is of interest, not only for understanding the development of the British fauna through time, but for understanding changes in river systems which may be man induced.

*Documentation*
Comparisons between the dietary evidence recovered from specialised settlements, such as religious houses, can provide an indication of status and trade links. Environmental evidence from pollen analysis and waterlogged plant macrofossils can demonstrate the influence of the settlement on the surrounding landscape, as well as extend the range of economic information. Documentary evidence often survives for these types of establishment, and this makes them of added interest when they can be related to land use and trade (Carruthers 1993). Primary documentation for the town of Evesham and its abbey is no more than average for a place of its size and status in the medieval period, although it is voluminous for the 18th and 19th centuries (Dalwood 1995). These references may be useful for complementing evidence of market gardening and other local industries obtained as a result of the environmental study.

*Group value*
There are currently no known related sites.

*Survival/condition*
A number of stratigraphically related deposits of environmental interest were present at this site. Moreover, environmental remains from a peaty deposit were well preserved by waterlogging, and are therefore of high priority.

*Fragility/vulnerability*
It is likely that innumerable small peat deposits remain undetected and it is important that information is not lost when sites of this nature come under threat (Carruthers 1993). The peat deposit discovered at the site adjacent to Avon Nursaries is an important source of evidence for changes in land use through time and is vulnerable to changes in the water table which may result from development on or near the site.

*Potential*
Studies of the landscape of agricultural industry are a research priority (English Heritage 1991), as are studies of the relationship between urban and rural sites which are largely unknown in middle England and are crucial to the understanding of a society's economy. All sites which can be included in such a study should be given a high priority (Grieg and Moffett unpub). In addition, the further study of waste and process material from industrial sites is needed to determine craft procedures (English Heritage 1991).

Finally, the results from this study may be of use when combined with other environmental studies along the River Avon, such as at Bidford-upon-Avon (Osborne 1988; Greig 1987) and an abandoned Flandrian river channel related to the Avon at Pershore (Vince and Whitehead 1979).

## 9.3 Other sites within the easement

None of the other sites recorded achieve significance under any of the criteria.

## 10 Academic summary

*An excavation and salvage recording were carried out on the line of the easement for the proposed installation of a sewage pumping main. This was located between the Evesham New Terminal Pumping Station and Hampton Parks WRW and was undertaken on behalf of Severn Trent Water Ltd. The easement affected a number of sites of archaeological interest, primary amongst which was Abbot Chyryton's Wall (HWCM 2821) which is a scheduled ancient monument (County Monument No Here and Worc 221).*

*Evidence was found for the early development of the boundary of the Evesham Abbey precinct and the below-ground condition of the precinct wall was determined. A ditch running at an oblique angle to the wall probably represents a pre-wall boundary for the precinct, possibly associated with a hedge.*

*Elsewhere on the easement field drains were found that were probably constructed of stone robbed from Abbot Chyryton's Wall, presumably in the post-dissolution period.*

*The integrated environmental study provided valuable contributions to local knowledge. These include changing river regimes, both natural and man-made, and information about local industries from the medieval to the post-medieval period.*

*The interpretation of the fluvial deposits is ambiguous as there has been little systematic study of these phenomena in the Avon region. There is no doubt that a lower sandy mollusc-rich layer indicated conditions of relatively fast water flow. The difficulty lies in identifying the mechanism by which the deposits have built up within the known topography. It is possible that this derives from the bed of an older channel to the east of the present channel, or that the present channel was wider in the past. This problem is made particularly acute by the possibility that the evidence may relate to activities operating very locally or over a short period of time.*

*A similar level of uncertainty pertains to the interpretation of the overlying peaty clay. Whilst this must have formed in marshy conditions, where the water was slow moving, the evidence suggests that this micro-environment was sufficiently close to fast-flowing water to be affected by it. Whilst such circumstances occur naturally on the inside of meanders it is also possible that the peat formation may relate to river management in the 17th century.*

*Changes in the rates of alluvial deposition are commonly associated with changes in the ground cover. In later prehistoric times, in the lower Severn and Avon valleys, such a change in alluvial sediments has been interpreted as resulting from forest clearance and increased agricultural activity. A similar change may have resulted from the expansion of the market gardening industry in the post-medieval period.*

*The possible cultivation of crops of the cabbage and beet families are all*

*indicated at this time. Evidence of hop or hemp was also found. Documentary records exist for the latter two industries in Bengeworth in the late 16th century.*

The Service has a professional obligation to publish the results of archaeological projects within a reasonable period of time. To this end, the Service intend 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.

## 11 The archive

The archive consists of:

24 Context records AS1
4 Fieldwork progress records AS2
1 Photographic record AS3
2 Colour transparency films
2 Black and white photographic films
1 Matrix sheet AS7
1 Levels record AS19
1 Context number catalogue AS5
1 Sample record AS17
3 Scale drawings
1 Box of finds
1 Computer disk

The project archive has been placed at:

Hereford and Worcester County Museum
Hartlebury Castle
Hartlebury
Near Kidderminster
Worcestershire DY11 7XZ

Tel Hartlebury (01299) 250416

## 12 Acknowledgements

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## 13 Personnel

The project was coordinated by Simon Woodiwiss BA AIFA (Principal Field Archaeologist). The excavation of Abbot Chyryton's Wall was led by Martin Cook (Assistant Archaeological Field Officer) and the salvage recording on the easement was led by Nigel Topping PIFA (Archaeological Assistant).

Assistance on the excavation was provided by Paul Godbehere and David Wichbold (Archaeological Assistants) and Gavin Evans. The report on the environmental remains was produced by Elizabeth Pearson MSc (Environmental Archaeologist) with contributions on the pollen from James Greig (Department of Ancient History and Archaeology, University of Birmingham), insect remains from David Smith (Department of Ancient History and Archaeology, University of Birmingham) and on the mollusca by Andrew Moss (School of Geography, University of Birmingham). The report on the finds was produced by Stephanie Ratkai (Finds Officer). The illustrations were produced by Carolyn Hunt PIFA MAAIS, (Illustrator) and the report was edited by Robin Jackson BA AIFA (Assistant Project Officer).

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## 15 Abbreviations and glossary

HWCM - Numbers prefixed with "HWCM" are the primary reference numbers used by the Hereford and Worcester County Sites and Monuments Record.

HWCC - Hereford and Worcester County Council.

HWCRO - Hereford and Worcester County Records Office.

CMHTS - Central Marches Historic Towns Survey

AML - Historic Buildings and Monuments Commission, Ancient Monuments Laboratory

MERL - Museum of English Rural Life, University of Reading, Whiteknights, Reading.

Table 1 Summary of the structural analysis

**Deposits relating to Abbot Chyryton's Wall**

## Phase 1 - Natural deposits

| Context | Type | Interpretation | Description |
|---|---|---|---|
| 023 | Layer | Natural alluvium | Pale yellow grey silty clay |

## Phase 2 - 14th century

| Context | Type | Interpretation | Description |
|---|---|---|---|
| 002 | Positive feature | Wall | Wall to east of pipe trench |
| 004 | Positive feature | Wall | Wall to west of pipe trench |
| 010 | Fill | Fill of construction trench (21) | Light orange brown silty clay with many small angular stones and abundant mortar flecks |
| 016 | Layer | Stone surface to north of wall | Pale grey brown silty clay with abundant small stone fragments |
| 020 | Layer | Alluvial layer | Dark grey brown silty clay with very occasional small angular stones |
| 021 | Cut | Construction trench for wall | Edge never found as much disturbed by services trench |

## Phase 3 - 14th to 16th century

| Context | Type | Interpretation | Description |
|---|---|---|---|
| 009 | Layer | Alluvial layer | Dark grey brown silty clay with occasional small angular stones |
| 015 | Layer | Alluvial layer | Grey green brown silty clay with very occasional small angular stones |
| 018 | Fill | Fill of ditch (19) | Grey green brown silty clay with occasional medium fragments of limestone and very rare charcoal flecks |
| 019 | Cut | Ditch or boundary | Linear cut running south-west-north-east |

## Phase 4 - mid 20th century

| Context | Type | Interpretation | Description |
|---|---|---|---|
| 003 | Positive feature | Tumble from wall | Medium angular stone fragments |
| 005 | Fill | Fill of service trench | Dark grey brown silty clay with abundant medium angular stone fragments |
| 006 | Cut | Service trench | Linear steep sided, flat bottomed trench |
| 007 | Fill | Fill of posthole (8) | Dark grey brown silty clay with abundant small to large angular stones and occasional flecks of charcoal |

| | | | |
|---|---|---|---|
| 008 | Cut | Posthole | Circular, vertically sided, flat bottomed cut |

### Phase 5 - later 20th century

| Context | Type | Interpretation | Description |
|---|---|---|---|
| 001 | Layer | Surfacing of access to field | Dark grey brown silty clay with abundant medium to large angular stones and very occasional whole bricks |
| 012 | Fill | Fill of pipe trench (13) | Dark orangy brown slightly silty clay with moderate small angular stones |
| 013 | Cut | Pipe trench | Vertically sided flat bottomed linear cut |
| 022 | Layer | Modern road surfacing | Successive layers of tarmac, stone sub-base, crushed stone and brick rubble |
| 024 | Layer | Topsoil | Vegetable soil |

**Deposits relating to the reception pits**

### All deposits

| Context | Type | Interpretation | Description | Samples |
|---|---|---|---|---|
| 100 | Layer | Topsoil | Vegetable soil | |
| 101 | Layer | Alluvial layer | Subsoil | 1,4 |
| 102 | Layer | Alluvial layer | Dark grey clay | 1,2 |
| 103 | Layer | Peaty layer | Very dark grey brown silty clay with preserved wood, bone and leather and much decayed organic matter | 2,5 |
| 104 | Layer | Peaty layer | Grey brown silty sand with decayed organic matter | 2,3 |

## Table 2: The plant remains from context 103

| botanical name | common name | habitat | 103 |
|---|---|---|---|
| **Waterlogged plant remains** | | | |
| *Ranunculus acris/repens/bulbosus* | buttercup | ABCD | ++ |
| *Brassica* sp (cult) | cabbage, turnip, swede etc | F | + |
| Cruciferae sp indet | crucifer | | + |
| *Fumaria* sp | fumitory | ABC | + |
| *Silene* sp | campion/catchfly | ABCDE | + |
| *Linum usitatissimum* seed | cultivated flax | A | + |
| *Onobrychis viciifolia* | sainfoin | AD | + |
| *Rubus fruticosus* agg | bramble etc. | CD | + |
| *Polygonum persicaria* | redshank | AB | ++ |
| *Rumex obtusifolius* sp | broad-leaved dock | ABCDE | ++ |
| *Urtica dioica* | common nettle | CDE | +++ |
| *Salix* sp bud | willow | C | + |
| *Dipsacus fullonum* | wild teasel | ABC | + |
| *Carduus/Cirsium* sp | thistle | ABCD | ++ |
| *Potamogeton* sp | pondweed | E | + |
| *Scirpus maritimum/Schoenoplectus* sp | club-rush/bulrush | E | + |
| *Carex* spp. | sedge | E | + |
| Graminae sp indet | grasses | ABCDE | ++ |

**Habitat key**

A = cultivated ground
B = disturbed ground
C = woodlands, hedgerows and scrub etc.
D = grasslands, meadows, and heathland
E = aquatic/wet habitats: ditches, streambanks etc.
F = cultivar

**Abundance**

+ = 1-10
++ = 11-50
+++ = 50-100

## Table 3: The pollen.

Pollen and spore list, names and order according to Stace (1991), Bennett (1994). Pollen counts given in numbers of grains.

| sample: | 86cm | 111cm | |
|---|---|---|---|
| Polypodium | - | 2 | polypody |
| Pteridium | 4 | - | bracken |
| Pinus | | 4 | 1 pine |
| Nymphaea | 2 | - | white water-lily |
| Ranunculus acris-t | 6 | - | buttercups |
| Ranunculus trichophyllus-t | 1 | - | water crowfoot |
| Ulmus | - | 1 | elm |
| Cannabis-t | 16 | 8 | hemp, hops |
| Urtica | 2 | 1 | nettle |
| Fagus | - | 2 | beech |
| Quercus | 10 | 4 | oak |
| Alnus | 7 | 5 | alder |
| Corylus-t | 2 | 1 | hazel |
| Chenopodiaceae | - | 2 | fat hen |
| Caryophyllaceae | 2 | 1 | chickweed fam. |
| Persicaria bistorta-t | 1 | 1 | bistort |
| Rumex sp | 5 | - | docks |
| Salix | 2 | - | willow |
| Brassicaceae | 7 | 13 | crucifers |
| Filipendula | - | 2 | meadowsweet |
| Potentilla-t | 1 | - | cinquefoil |
| ? Vicia faba | 1 | - | ? bean |
| Myriophyllum verticillatum | - | 2 | millfoil |
| Linum usitatissimum | - | 1 | flax |
| Apiaceae | 3 | - | umbellifers |
| Plantago major | - | 1 | greater plantain |
| Plantago lanceolata | 6 | 7 | ribwort plantain |
| Fraxinus | 3 | 2 | ash |
| Rubiaceae | 4 | - | bedstraws |
| Sambucus nigra | 1 | - | elder |
| Cirsium-t | - | 1 | thistles |
| Centaurea cyanus | ?2 | 3 | cornflower |
| Centaurea nigra | 3 | 5 | knapweed |

| | | | |
|---|---|---|---|
| Lactuceae | 21 | 14 | dandelions etc. |
| Solidago-t | 2 | - | daisies etc. |
| Achillea-t | - | 3 | mayweeds etc. |
| Cyperaceae | 6 | 12 | sedges |
| Poaceae | 31 | 11 | grasses |
| Cerealia | 15 | 11 | cereals |
| Sparganium emersum-t | - | 4 | bur-reed |

## Table 4: The Coleoptera

Carabidae
Bembidion spp
Patrobus spp

Hydraenidae
Ochthebius spp

Hydrophilidae
Megasturnum boleotophagum (Marsh)

Staphylinidae
Platysethus arenarius (Fourc)

Elmidae
Limnius volkmari (Panz)
Oulimnius spp
Stenelmis canaliculata (Gyll)

Elateridae
?Trixagus spp

Scarabaeidae
Aphodius spp

Chrysomelidae
Donacia spp

Curculionidae
Sitona spp
Hypera spp
Barynotus spp
Notaris acridulus (L)

In addition the remains of a number of Caddis and Alder flies were observed.

## Table 5: The mollusca

Theodoxus spp

Bithyniidae
Bithynia spp

Lymnaeidae
Lymnaea spp

Planorbidae
Planorbis spp

Helicidae
Trichia spp

Bivalvia
Unio/ Anodonta spp

In addition a large number of Pisidium species were seen in the sieves.

## Table 6 Summary of the artefacts analysis

### Abbot Chryton's Wall

| HWCM | Context | Type | Number of items | Weight | Description/interpretation |
|---|---|---|---|---|---|
| 2821 | 001 | Pottery | 1 | 22g | Post-medieval pottery |
| | | Building material | 3 | 126g | Ceramic roof tile |
| | | Building material | 1 | | Stone roof tile, limestone with peg hole |
| | 002 | Pottery | 3 | 68g | Post-medieval pottery |
| | | Clay pipe | | | 4 stems, 3 bowls |
| | | Animal bone | 5 | 49g | Fragment |
| | | Shell | 1 | 7g | Fragment |
| | 015 | Animal bone | 1 | 32g | Fragment |
| | 016 | Pottery | 1 | 1g | Late medieval/early post-medieval pottery |
| | 020 | Pottery | 1 | 85g | Medieval |
| | | Animal Bone | 3 | 31g | Fragments |
| | 023 | Pottery | 1 | 8g | Roman |
| | | Ceramic | 1 | 3g | Post-medieval?, roof tile? |

### Salvage recording

| HWCM | Context | Type | Number of items | Weight | Description/interpretation |
|---|---|---|---|---|---|
| 21295 | 101 | Building material | 1 | 35g | Ceramic Roof Tile |
| | | Animal bone | 11 | 1206g | |
| | | Shell | 12 | 51g | |
| | 103 | Animal bone | 37 | 3413g | |
| | | Shell | 45 | 147g | |
| | | Leather | 11 | | welted shoes, straps and offcuts |
| | | Wood | 5 | | 3 worked pieces |

| | | | | |
|---|---|---|---|---|
| u/s | Pottery | 1 | 7g | Medieval |
| | Pottery | 1 | 39g | Post-medieval |
| | Building material | 1 | 64g | Ceramic roof tile (nibbed) |
| | Leather | 3 | | welted shoe fragments |
| 15209 | Pottery | 5 | 23g | Roman |
| | Pottery | 7 | 74g | Medieval |
| | Pottery | 25 | 520g | Post-medieval |
| | Clay pipe | 1 | | bowl |
| | Building material | 16 | 548g | Ceramic roof tile |
| | Animal bone | 2 | 12g | Fragments |
| 21242 | Pottery | 3 | 72g | Post-medieval - 17th-18th century. |
| 21266 | Pottery | 12 | 180g | Post-medieval |
| | Building material | 7 | 124g | Ceramic roof tile |
| | Building material | 1 | 16g | Brick |
| | Glass | 1 | 22g | Fragment of vessel |
| | Shell | 2 | 58g | |