ARCHAEOLOGICAL EVALUATION AND MONITORING OF KEMERTON SEWAGE TREATMENT WORKS, KEMERTON, WORCESTERSHIRE

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Part 1 Project summary

A programme of archaeological evaluation and monitoring was undertaken at the Kemerton Sewage Treatment Works, Kemerton and Bredon, Worcestershire (NGR: SO 9414 3600 - SO 9300 3688). It was undertaken on behalf of Severn Trent Water, who intends to decommission an existing sewage treatment works and lay a new pumping main. The project aimed to determine if any significant archaeological site was present and if so to indicate its nature, date and location.

One open area, one borehole and three trenches were investigated.

The open area and borehole within the existing sewage treatment works compound indicated that the 5th-8th century settlement activity previously identified in the field to the north did not continue into the area.

Foundation gravels for the modern road surface were noted directly over the natural matrix within the trenches along Kinsham Lane and Kemerton Road. A shallow, clayey sand filled hollow observed opposite Lower Court was of indeterminate date or function, although it may relate to an adjacent field boundary to the west.

A wide shallow feature was identified within the trench along the track between Kinsham Lane and the sewage treatment compound. It lay at the north end of a curvilinear crop mark visible in aerial photographs and was determined to be a hollow way during previous investigations in the field to the south. Again, no finds were recovered, so it is still undated and its relationship with the postulated Iron Age enclosure to the south is still undetermined.

Part 2 Detailed report

1. Background

1.1 Reasons for the project

A programme of archaeological evaluation and monitoring was undertaken of Kemerton Sewage Treatment Works (NGR: SO 9414 3600 - SO 9300 3688), Kemerton, Worcestershire (Fig 1), on behalf of Severn Trent Water. They intend to decommission an existing sewage treatment works and lay a new pumping main. The Curator, Worcestershire County Council, considers that a site of archaeological interest may be affected (WSM 20019).

1.2 Project parameters

The project conforms to the *Standard and guidance for archaeological field evaluation* (IFA 1999a) and *Standard and guidance for an archaeological watching brief* (IFA 1999b).

The project also conforms to a brief prepared by Worcestershire County Council (HEAS 2004a) and for which two project proposals (including detailed specification) were produced (HEAS 2004b; HEAS 2004c).

1.3 Aims

The aims of the evaluation and monitoring project were to preserve by record those archaeological deposits directly or indirectly threatened by the development.

2. Methods

2.1 Documentary search

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

Cartographic sources

- 1st edition Ordnance Survey map, 1884, scale 25": 1 mile
- 1st edition Ordnance Survey map, 1891, Gloucestershire sheet 13.XII NE, scale 6": 1 mile
- Ordnance Survey map, 1903, Worcestershire sheet 39.LV NE, scale 6": 1 mile
- Ordnance Survey map, 1924, Worcestershire sheet 39.LV NE, scale 6": 1 mile
- 2004 Ordnance Survey 1:10,000 Superplan with HER cropmark data

Aerial photographs

- HER unreferenced air photo, 2004 (pers comm Mike Glyde)

Documentary sources

- Site archives (from earlier excavations, evaluations etc)

2.2 Fieldwork methodology

2.2.1 Fieldwork strategy

A detailed specification has been prepared by the Service (HEAS 2004b).

Fieldwork was undertaken between 2nd June 2004 and 23rd February 2005. The site reference number and site code is WSM 34184.

One open area (Area 2) was excavated, amounting to *c* 163m². In addition, 1 borehole (Borehole 1) and *c* 1,405m of trenches (Trenches 3-5) were observed along the pipeline route of *c* 2,950m, representing a sample of *c* 48%. The location of these areas is indicated in Figures 2a and 2b.

Within the open area deposits considered not to be significant were removed under archaeological supervision using a 180º wheeled excavator, employing a toothless bucket. Subsequent excavation was undertaken by hand. Clean surfaces were inspected and selected deposits were excavated to retrieve artefactual material and environmental samples, as well as to determine their nature. Deposits were recorded according to standard Service practice (CAS 1995). Within the trenches the exposed sections were sufficiently clean to observe well-differentiated archaeological deposits. However the depth and narrow width generally prevented access, so recording was frequently undertaken from above.

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, by Angus Crawford

2.3.1 Artefact recovery policy

The artefact recovery policy conformed to standard Service practice (CAS 1995; appendix 2). This in principal determines that all finds, of whatever date, must be collected. However, in this case only modern porcelain, brick and tile fragments were observed in the spoil during machining of modern horizons. Only a small sample was retained.

2.3.2 Method of analysis

All hand-retrieved finds were examined and a primary record was made on a Microsoft Access 2000 database. Artefacts were identified, quantified and dated. Pottery was examined under x20 magnification and recorded by fabric type and form according to the fabric reference series maintained by the service (Hurst and Rees 1992).

2.4 Environmental archaeology methodology

2.4.1 Sampling policy

The environmental sampling strategy conformed to standard Service practice (CAS 1995; appendix 4). In the event, no deposits or horizons were identified which were suitable for or conducive to environmental analysis.

2.5 The methods in retrospect

Although it was not possible to access all of the trenching due to health and safety concerns, the methods adopted allow a good degree of confidence that the aims of the project have been achieved.

3. Topographical and archaeological context

The site of the borehole and open area excavation was the existing Sewage Treatment Works, south of the village of Kemerton (SO 9414 3600; Borehole 1 and Area 2; Fig 2b). The pipeline trench ran from the aforementioned sewage works, along a small track between fields (SO 9414 3600 - SO 9404 3605; Trench 4; Fig 2b), north-east along Kinsham Lane, to Kemerton village (so 9404 3605 - SO 9444 3716; Trench 3; Figs 2a and 2b) and east along Kemerton Road, past Lower Westmancote, toward Bredon (SO 9444 3617 - SO 9302 3687; Trench 5; Fig 2a).

The archaeological, historical, geological and geographical background to the site has previously been described (Fagan *et al* 1994; Terrain Archaeology 2001, Jackson forthcoming). In summary:

The landscape is dominated by Bredon Hill, a massive Jurassic outlier of the Cotswolds, which lies about 2.5km to the north-north-east of the site and overlooks the Vale of Evesham and the Lower Avon Valley. The study area has a gradual slope from *c* 49-30m AOD down to the south-east, draining into a series of small watercourses which feed into the Carrant Brook, a tributary of the River Avon. The fields either side of the pipeline route are largely under pasture, but also include a lake on the site of former gravel quarrying, a nature reserve and small plantations.

The solid geology comprises grey Lower Lias mudstones and clays, with Oolitic limestone at the top of the hill (Whittaker 1972, 3-5). The drift geology is more complex (Briggs *et al* 1975), due to the interaction of glacial gravel terraces (the Second Avon Terrace) and Fan Gravels. The study area lies towards the southern edge of the Fan Gravels, which are the result of solifluction and decalcification of the underlying limestone gravels on the lower slopes of Bredon Hill (Worssam 1982, 1,8).

The parish of Kemerton has some of the richest resources for evidence of human activity in the county. Stray finds date from the Palaeolithic, while *in situ* deposits have been recorded dating from the Neolithic onwards.

The earliest evidence of human activity is a significant assemblage of Palaeolithic material from Aston Mill Quarry on the south side of the parish (WSM 29221). This included fifteen hand-axes along with other broadly contemporary material, probably of the Lavallois industry. This is highly significant as, although not *in situ*, they are the most extensive collection of Palaeolithic material recovered within the county to date.

A project of salvage recording was subsequently undertaken in advance of the quarrying at Aston Mill. This produced extensive evidence of occupation from the Mesolithic (middle Stone Age) onwards. This included a small scatter of Mesolithic worked flint, possible Late Neolithic occupation, an Early Bronze Age ring-ditch with secondary cremations of Middle to Late Bronze Age date, Middle Iron Age pits and enclosure ditches, Late Iron Age and early Roman ditches and an Anglo-Saxon *grubenhaus* (sunken floored building).

Similar work was undertaken at Huntsman's Quarry to the north-west. This revealed Late Bronze Age occupation and field systems over a wide area. Limited evidence of occupation in the Upper Palaeolithic, Mesolithic and Neolithic, plus funerary activity in the Early Bronze Age was also recorded (Jackson forthcoming; WSM 21698).

On the southern slopes of Bredon Hill, many stray finds of prehistoric to Roman date have been made, which indicate extensive occupation and activity. Conderton Camp lies on these slopes and appears to have been occupied throughout the Middle Iron Age, while at the crest itself is Kemerton Camp, a major Iron Age promontory fort, which was partially excavated in the 1930s. Investigations of cropmark sites in 1998 to the south of the present study area identified a small Middle Iron Age enclosure and a larger series of Late Iron Age and Roman enclosures (Terrain Archaeology 2001; WSM 27144).

A large number of cropmark sites have been identified on the gravel terraces north of the Carrant Brook. These are primarily enclosures, with associated field systems and track-ways. Fields to either side of Kinsham Lane, south of Area 2 are a Scheduled Ancient Monument (SAM 212), comprising a well-defined enclosure and ditched trackway, with surface finds of Iron Age or Roman date (WSM 05098, 05137 and 07596; Fig 2b). Cropmark complexes extend further afield, along the brook to the east and west. These include pit alignments, ring-ditches and extensive field systems of probable Bronze Age, Iron Age and Roman date, indicating extensive occupation of the valley throughout these periods

Of later date, Anglo-Saxon domestic occupation has been recorded at two locations beyond Aston Mill and includes two further *grubenhauser* of 6th-7th century date (*ibid*; Fagan *et al* 1994; WSM 20019).

Thus it appears that the gravel terraces between the Carrant Brook and Bredon Hill have been extensively utilised from the prehistoric onwards, with field systems and track ways defining a managed landscape established for the maintenance of an economy primarily based on livestock farming, the track ways perhaps facilitating seasonal movement of stock between the low-lying meadow on the terraces and the higher ground to the north.

Later occupation appears to have been focussed on the two surviving villages of Kinsham and Kemerton, which have medieval origins. These settlements were overwhelmingly rural, with extensive earthwork and cropmark evidence in the surrounding fields, indicating that open-field strip-farming agriculture was practiced.

4. Results

4.1 Structural analysis

The trenches and features recorded are shown in Figs. 2-4. The results of the structural analysis are presented in Appendix 1.

4.1.1 Phase 1 Natural deposits

The natural comprises a brownish yellow sand with variable inclusions of limestone gravel and pebbles, with bands of yellowish grey clay at depth.

The soils comprise a sandy silt topsoil, over sandy silt loam subsoil. No developed soil profile was observed within the Sewage Treatment Works compound, along Kinsham Lane or Kemerton Road (Borehole 1, Area 2, Trenches 3 and 5), while along the track (Trench 4) the two had generally been amalgamated into one homogenous plough soil.

4.1.2 Phase 2 Post-medieval/modern deposits

Within the existing sewage treatment works compound (Borehole 1 and Area 2; Fig 3), modern services and redeposited layers with modern debris lay over and cut into the natural matrix.

Along Kinsham Lane and Kemerton Road (Trenches 3 and 5; Figs 2a and 2b) a limestone gravel and stone layer lay directly over the natural material. Occasional modern brick fragments were noted, within the gravels and impressed into the surface of the natural.

A dump deposit was observed at the east end of the track between the Sewage Treatment Works compound and Kinsham Lane (Trench 4; Fig 2b). It comprised mixed soils plus redeposited sand and gravel with frequent pockets of iron waste, glass and other domestic debris of early-mid 20th century date.

4.1.3 Phase 4 Undated deposits

An isolated undated feature was observed along Kinsham Lane, opposite Lower Court to the east and a field boundary hedge to the west (Trench 3). It was only noted within the south-east section and comprised a single greenish grey clayey sand deposit with occasional charcoal flecks within a shallow cut. The cut was 3m wide, with concave sides and a flattish base, up to 0.86m below the present ground surface.

A shallow feature was recorded along the track between the Sewage Treatment Works compound and Kinsham Lane (Trench 4; Fig 2b), 44.50m from the west end. It was *c* 3m wide and up to 1.02m below the present surface. The break of slope was very gradual (almost negligible to the west) with a slightly undulating base (Fig 4). It was observed in both sections, on a general north-south alignment and was filled with a mottled orangey brown silt loam, little different from the subsoil above.

4.2 Artefact analysis, by Angus Crawford

The artefactual assemblage recovered is summarised in Tables 1-3.

The artefactual assemblage retrieved from the site consisted of two modern pottery items of modern date weighing 1718g (context1011), one roof tile fragment of post-medieval date (context 1008) and six fragments of ceramic brick also of post-medieval date (context 1088).

The pottery items have been grouped and quantified according to fabric type (see Table 2). Where possible, dates have been allocated and the importance of individual finds commented upon as necessary.

4.2.1 Post-medieval

All of the post-medieval material came from a single context (1008) and consisted of a piece of roof tile and brick fragments. While the material was in poor condition and could only be placed broadly within the post-medieval period one brick fragment could be dated to before the introduction of the 1784 brick tax by its thickness.

4.2.2 Modern

The modern assemblage consisted of a complete Denby manufactured stoneware foot warmer. The type is advertised on one surface as ‘The Artic Footwarmer’ with a registered design number of 628876. While an exact date of manufacture is unknown it is of a form that was in use in the early 20th century.

The second piece was a partial brown glazed stoneware jug manufactured for Cadbury Bourneville. The jug serves two purposes the first being to be used as a domestic item to manufacture hot drinking chocolate and secondly to advertise Cadbury Bourneville cocoa. It has a stencilled Cadbury logo in white glaze on the body while the words ‘ Make Drinking Chocolate With Bourneville Cocoa’ runs around the shoulder.

Context	Material	Type	Total (g)	Weight
1008	Brick	Post-medievalMD	6	600
1008	Roof tile	Post-medievalMD	1	74
1011	Pottery	Modrern	2	1718

Table 1: Quantification of the assemblage

Context	Fabric Name	Fabric	Total (g)	Weight
1011	Miscellaneous modern stoneware	81.4	2	1718

Table 2: Quantification of the pottery by fabric type

Date range	Material	Total (g)	Weight (g)	Specialist report?	Important research assemblage?
Post-medieval	Brick	1	335	N	N
Modern	Pottery	1	1188	Y	N
Post-medieval	Brick	5	265	N	N
Post-medieval	Tile	1	74	N	N
Modern	Pottery	1	530	Y	N

Table 3: Summary of the assemblage

5. Synthesis and conclusions

In Area 2 it is considered that almost all layers and deposits were scoured off down into the natural matrix during the construction of the existing sewage treatment works in the 1960s. The small hollow containing silty sand on the east, toward the stream, is considered to be a relict subsoil and did not represent an archaeological feature. The features recorded in the field immediately to the north (Fagan *et al* 1994) comprised postholes, stake-holes and beam-slots. They were similarly truncated, in this case by medieval/post-medieval agricultural activity (resulting in earthworks of ridge and furrow), but were determined to be evidence of 5th-8th century rural settlement occupation. Thus it is unclear from the present investigation whether activity of this period continued within the sewage compound.

The feature observed within Trench 4, and determined to be the linear cropmark identified within the field to the south was of similar character to the section investigated in 1998 (Terrain Archaeology 2001), although at this point it was somewhat narrower, shallower and unassociated with other features. Its interpretation as a hollow way remains, although again no finds were recovered, so it is still undated and its relationship with the postulated Iron Age enclosure to the south is still undetermined.

The undated feature observed in Trench 3, opposite Lower Court was of indeterminate function. It may represent a natural anomaly, the base of a truncated pit or ditch terminus (continuing to the south-east), or potentially a tree bole. Its location opposite a boundary hedge indicates that the latter is most likely if the road was formerly narrower, as the 1st edition OS map depicts trees defining this boundary.

Both the post-medieval and modern material recovered is consistent with the general discard of household refuse and is of little archaeological significance.

6. 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.

A programme of archaeological evaluation and monitoring was undertaken on behalf of Severn Trent Water of Kemerton Sewage Treatment Works, Kemerton, Worcestershire (NGR ref SO 9414 3600 - SO 9300 3688; HER ref WSM 34184). One open area, one borehole and three trenches were investigated.

The open area and borehole within the existing sewage treatment works compound revealed modern horizons and disturbance directly overlying and cut into the natural sand and gravel. A small area of silty sand on the east side was determined to be a relict subsoil. No continuation of the 5th-8th century settlement activity previously identified in the field to the north was recorded. Foundation gravels for the modern road surface were noted directly over the natural matrix within the trenches along Kinsham Lane and Kemerton Road. A shallow, clayey sand filled hollow observed opposite Lower Court was of indeterminate date or function, although it may relate to the field boundary adjacent to the west. A wide shallow silt loam filled feature was identified within the trench along the track between Kinsham Lane and the sewage treatment compound. It lay at the north end of the curvilinear crop mark visible in aerial photographs and determined to be a hollow way during previous investigations in the field to the south. Again, no finds were recovered, so it remains undated and its relationship with the postulated Iron Age enclosure to the south is still undetermined.

7. The archive

The archive consists of:

13	Fieldwork progress records AS2
2	Photographic records AS3
34	Digital photographs
1	Drawing number catalogues AS4
3	Scale drawings
5	Trench record sheets AS41
1	Box of finds
1	Computer disk

The project archive is intended to be placed at:

Worcestershire County Museum

Hartlebury Castle

Hartlebury

Near Kidderminster

Worcestershire DY11 7XZ

Tel Hartlebury (01299) 250416

8. Acknowledgements

The Service would like to thank the following for their kind assistance in the successful conclusion of this project, Nagen Nagendran and Gary baker (Severn Trent Water), Mike Fothergill and Dean Thomas (McNicholas) and Mike Glyde (Historic Environment Planning Officer).

9. Personnel

The fieldwork and report preparation was led by Tom Vaughan. The project manager responsible for the quality of the project was Simon Griffin. Fieldwork was undertaken by Tom Vaughan and Anna Deeks, finds analysis by Angus Crawford, illustration by Steve Rigby and Carolyn Hunt.

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11. Abbreviations

NMR	National Monuments Record.
SMR	Sites and Monuments Record.
WCRO	Worcestershire County Records Office.
WSM	Numbers prefixed with 'WSM' are the primary reference numbers used by the Worcestershire County Historic Environment Record.

Plate 1: Area 2, view west-north-west

Plate 2: Trench 3, view south-south-west

Plate 3: Trench 4, view west-north-west

Plate 4: Trench 5, view west

Appendix 1 Context descriptions