

*A Pre-construction
Archaeological Survey
on the route of the Humberside
to Buncefield Pipeline*

Pirton, Hertfordshire



H-B 39-05



PETROFINA (UK) LTD.

HB/39-05

HUMBERSIDE TO BUNCEFIELD PIPELINE

PRECONSTRUCTION ARCHAEOLOGICAL SURVEY REPORT

DANE FIELD, PIRTON, HERTFORDSHIRE

by

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PETROFINA: HUMBERSIDE TO BUNCEFIELD PIPELINE
PRECONSTRUCTION SURVEY REPORT
DANE FIELD, PIRTON, HERTS.

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Abstract

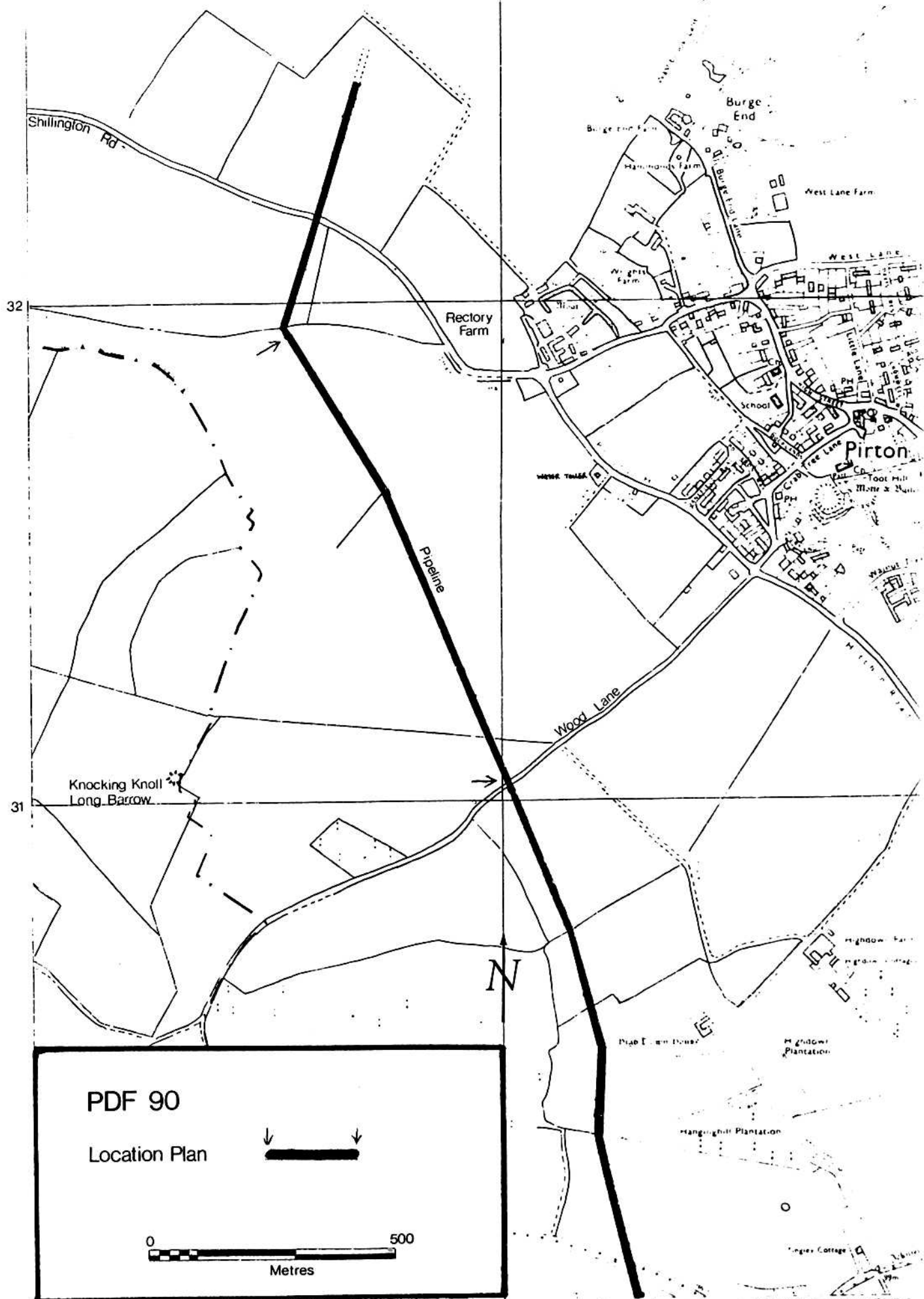
A survey of the route of a proposed oil pipeline across Dane Field, Pirton, was carried out in order to attempt to locate a probably Anglo-Saxon cemetery, disturbed in the vicinity in the late eighteenth and nineteenth centuries. This cemetery was not located by the survey, but a Romano-British site was found and investigated in a limited way.

Contents

1	Abstract
11	Contents
11	List of Figures
1	1: Introduction
2	2: Methodology
2	2.1: Fieldwalking
3	2.5: Trial Pits
5	3: Results (Fieldwalking)
7	4: Results (Trial Pits)
7	4.1: Trial Pits 1 to 5, the General Sampling Pits
9	4.2: Trial Pits 6 to 10, the Geophysical Survey Area
12	5: Discussion of Results
13	Appendix: Pottery from the Trial Pits

List of Figures

facing 11	Figure 1: Pirton, Hertfordshire
facing 1	Figure 2: Location Map of Pipeline
facing 2	Figure 3: NHDC Museums Archaeology Fieldwalking Record Card
facing 5	Figure 4: Distribution of Artifacts
6	Figure 5: Quantity of Finds by Period
facing 7	Figure 6: Pirton, Magnetometer Survey
7	Figure 7: Trial Pit 1
7	Figure 8: Trial Pit 2
8	Figure 9: Trial Pit 5
facing 9	Figure 10: Geophysical Area Trial Pits



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Location Plan



TL 13 SW

1 Introduction

1.1 To the north-east of Pirton, the Petrofina oil pipeline route has been diverted to avoid an important area of mediæval ridge-and-furrow earthworks surrounding Rectory Farm. The revised route crosses Dane Field, a one kilometre wide amalgamation of smaller enclosures skirting the west of Pirton. This area was formerly one of five mediæval open fields of Pirton.

1.2 In about the 1790s and again in about 1835, numerous inhumation graves were found during digging (for coprolites?) on Dane Field, Pirton. On the latter occasion about 'a hundred bodies' were found, some accompanied by pots, buckles and pins. They were in an area of about thirty feet by eighty feet. Cremations in urns were also found (*Gentleman's Magazine Library* (1835) 1: 305-6; *Publications of the Cambridge Archaeological Society* (1845) 1: 21; *Victoria County History, Hertfordshire* (1914) 4: 159). The find was made in the "Cat's Brains" area of Dane Field, the very extensive former open field to the west of Pirton village. "Cat's Brains" is the area in the north-west part of Dane Field, around TL 135315. A date for the cemetery of sixth to seventh century can be suggested.

Accordingly, it was decided that a pre-construction archaeological survey should be carried out on the route of the pipeline across Dane Field. The survey was to be by geophysical method, fieldwalking and trial pit digging. The geophysical survey was by another and is reported elsewhere. The fieldwalking and trial pit digging are reported here.

The magnetometer prospecting was done first and identified previously unknown archaeological anomalies at the northern end of the survey area. Half the trial pits were dug on these anomalies.

1.3 The Dane Field includes several fields which cover an area of the expansive slope leading from a spur of the Chiltern Hills down to the plain which spreads north of Pirton towards Shillington and ultimately to Bedford.

From the southern boundary near Wood Lane (a bridleway leading from Pirton westwards towards Pegsdon), the main field (0048) slopes gently into a broad fold before rising again to a pronounced ridge surmounted by a copse with a hedgerow extending north-east, in the direction of Rectory Farm. North of the hedgerow, after a slight rise, the terrain declines rapidly to the level ground northwest of Pirton in the vicinity of the fields of ridge-and-furrow at Rectory Farm. The ploughsoil across the fields is a variable mid to dark grey/brown chalky silt loam.

1.4 The section of pipeline route under scrutiny runs north north-west for six hundred and thirty-five metres from a point on Wood Lane (see figure 2), across the triangular eastern corner of field 6600, continuing in a straight line across field 0048 to a point twenty metres from the end of the hedgerow mentioned above. At this point the trajectory changes and the pipeline runs in a more westerly direction for three hundred and seventy metres before reaching a spot twenty metres south of the northern field boundary, where the survey ends before the direction changes and the route enters the next field.

1.5 In response to the sensitivity of the area, a systematic survey of the pipeline route was arranged to evaluate the threat to potential archaeological deposits. Consequently, in January 1990, following a proton magnetometer survey of this section, a team of Field Archaeologists from North Herts District Council Museums Service were contracted to undertake the work: identifying the route, fieldwalking the access corridor and excavating ten one metre square trial pits.

2 Methodology

2.1 Fieldwalking

The purpose of the fieldwalking project was to establish, by the use of a systematic process of finds recovery related to area, the nature of archaeological activity within the fields due to be crossed by the pipeline construction route, and to identify any areas of special interest.

2.2 The fieldwalking survey was used to establish the route of the pipeline, and to provide the basic grid with which to locate the trial pits (see below). Initial information concerning the spread of finds could also be used to suggest suitable locations at which to excavate. The surfaces of fields 0048 and 6600 were marked with shallow east-west oriented harrow-marks, and bore a crop of young cereal shoots 60mm high. The weather during the period of the project was unusually good for January, with moderate temperatures and minimal rainfall; together these factors encouraged a good finds recovery rate. The only detrimental factors were a constant strong wind and, more importantly, periods of intense, oblique light striking the field surface at an acute angle causing both glare and deep shadows. In general, however, the light does not appear to have affected the results seriously.

Starting at the northern end of the pipeline section (Point A on figure 2), a direction was established (see 2.3) and the survey progressed southwards. A Zeiss-Jena level was used to maintain a straight base line. The survey area extended six metres east and fourteen metres west of the 'centre' line shown on the location map. Accordingly, the fieldwalking was arranged in twenty-metre grid squares, using offsets from a tape laid along the pipeline. Four (variable) north-south transects were walked in each square, collecting finds from two one-metre strips to either side of the line. The finds were collected, labelled with coordinates within the squares and recorded on pro-forma record cards (see figure 3) together with any other relevant information concerning the area.

The fieldwalking began slowly as the team became accustomed to the field surface, and since the first nine squares produced a disproportionate quantity of finds compared to the remaining survey (see results) the collection policy was modified as the survey progressed. Mediæval and post-mediæval red tile fragments proved ubiquitous and were sampled in each square rather than plotted in detail. Extremely modern artifacts such as shotgun cartridges and plastic containers were not collected. In all other respects a one hundred per cent collection policy was maintained.

2.3 From Point A (see figure 2), there were no visible landmarks on the southern horizon on which to fix a compass bearing; this factor in conjunction with the absence of red surveyors pegs in the centre of field 0048 exacerbated a misread bearing, and unfortunately led to an incorrect alignment being followed for the initial part of the survey.

The yellow geophysical survey markers in the north of field 0048 were spotted, but it was assumed that since the previous survey team had approached the field from the south, some cumulative inaccuracy had occurred as they progressed north.

As the fieldwalking survey moved up the slope to the south, landscape features became visible indicating that the direction was wrong. Even taking into account the notoriously inaccurate field boundaries indicated on the 1973 Ordnance Survey 1:2500 map, it became obvious that the alignment was at fault and needed correction.

By this stage nineteen squares had been walked, a total distance of three hundred and eighty metres. According to the guideline map, the first section covered 370 to 380m before changing direction, therefore a new sighting was taken on the surveyors pegs on the southern field boundary (now visible). Five squares were walked before it was decided to 'side-step' approximately forty metres to the east so as to realign on


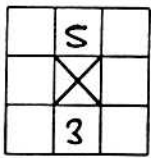
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National Grid TL 513680. 231870										SMR Number —																			
Comments X = FIND SPOTS HIGH INCIDENCE OF FINDS FROM WALKS 13 & 17. TIME SAMPLE COLLECTED :- 1 BAG.																													
Soil MOST, CLAYISH CHALKY LOAM.															Field LIGHTLY HARROWED SURFACE WITH SURFACE RUNS OF YOUNG SHOOTS. NO GRADIENT.														
Weather CLEAR & CLOUD Sheet Orientation  1 Square = 1M.										Adjacent Sheets 					Finds Bags 10 Date 4.1.90 Surveyors ADJ/FAP / DAW/AG.														
Mark All: Transects, Find Spots, Soil Changes, Surface Features																													
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Figure 3: NHDC Museums Archaeology Fieldwalking Record Card

the pipeline proper and thereby coincide accurately with the yellow markers indicating the southern geophysical survey area.

From Point B (see figure 2) a further thirty squares were required to complete the survey as far as Wood Lane, then three squares were added to cover the northern geophysical survey area which was largely missed by the incorrect alignment.

2.4 Even though the exact line of the pipeline route was not always adhered to, the effect on the survey results is not particularly detrimental. Archaeologically, the sample across the fields is no less viable: a complete survey was accomplished, and at each change of trajectory an overlap was allowed (see figure 2) in order to ensure continuity (this will have to be taken into account when reviewing the bar charts, figure 9).

Damage to the field surface and crops caused by partially walking the wrong line was negligible.

2.5 Trial Pits

The purpose of the trial pit series was to provide information, using a rapid form of limited excavation, concerning the nature of anomalies recorded during the geophysical survey, and at various points along the pipeline route where archaeological activity was suspected.

A limit of ten one metre square test pits was arranged for this section; five were allocated to investigate mapped geophysical anomalies, the remaining five to sample to the extent of the access corridor.

2.6 Location of pits in the geophysical survey areas.

Two rectangular areas were measured out by the geophysical survey team (see figure 2). The area in the south of field 0048 had no archaeological anomalies. At the north of the route, 55.5m from the northern boundary of field 0048, a second area, sixty by twenty metres, produced a number of interesting features. Pits 5 to 10 were located centrally over the major anomalies (see figure 6) whilst the tapes were in place during fieldwalking.

2.7 The remaining five pits were located to investigate possible areas of archaeological activity and to sample the outstanding length of the pipeline route. Pits 2 and 3 were placed in the southern geophysical survey area; pits 1 and 4 were spaced out to investigate a representative sample. Pit 5 was dug on the ridge, at the point where the pipeline changes direction.

2.8 Excavation procedure and recording.

All the pits were excavated manually. Each member of the team of four was responsible for the excavation and complete recording of one trial pit per day during this phase of the project. Where a trial pit uncovered archaeological deposits, excavation was limited to the minimum amount of disturbance required to extract demonstrably uncontaminated and datable material.

Each layer was removed systematically, all features were given context numbers and fully described using pro-forma record cards. Field drawings were made of all features, including post-excavation plans indicating the level of undisturbed natural subsoil in 'negative' pits. All finds were collected for analysis and a photographic record was maintained.

Finally, the pits were backfilled, leaving a slight mound to allow for subsidence, thereby producing a level surface for the crop spraying machinery.

2.9 The heights of features were recorded relative to three temporary bench marks established on various points along the pipeline route. These points were subsequently

measured against the known height of the Bench Mark at the junction of Hitchin Road and Shillington Road, near Rectory Farm, and absolute heights calculated.

2.10 A provisional grid was established during fieldwalking, beginning at the north of the pipeline section with a nominal coordinate allocated to the south-west corner of the first twenty-metre grid square (Sheet 1). This number was then reduced by twenty metres on the y axis for the south-west corner of each square as the survey progressed. The pipeline defined the y axis and for the purposes of the grid was assumed to be straight. Since the pipeline access corridor extended fourteen metres to the west of the line and six metres to the east, the western edge was designated 0 on the x axis.

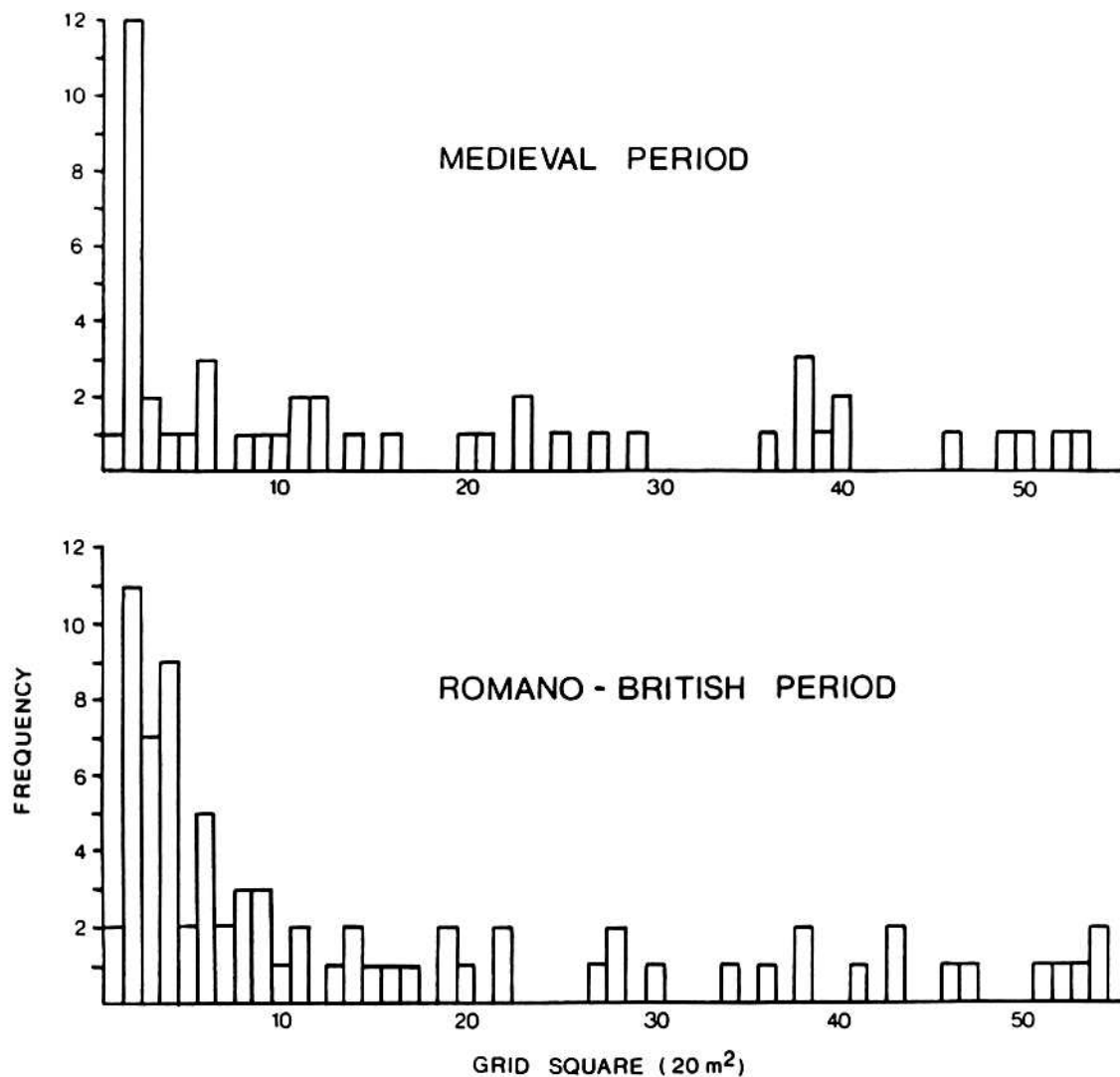
A more convenient system was subsequently devised and used for this report. Using the measurements recorded during fieldwork, the individual grid squares were plotted along the relevant lines at a scale of 1:2500 (see figure 2). Bearings and distances are correct on the map; the major variable, the gradient, was noted during fieldwalking, and the squares on the map adjusted to represent their true positions.

The coordinates of fieldwalking finds and of trial pits 1 to 4 were recorded within the relevant grid square, prefixed by the corresponding grid square number, eg. PIT 3: SH45 8/F. The same number was given to both the grid square and the corresponding record sheet.

The pits within the geophysical survey area referred to the overall 60x20m rectangle as a grid - the coordinates expressed as distances in metres from the south-west corner of the rectangle - to the south-west corner of each individual pit (see figure 4), eg. PIT 8: 10/30.

Pit 5 does not appear in either system, and is recorded as a distance and bearing from a known landscape feature, as well as indicated on the plan (see figure 2).

2.11 Finally, the records and finds were checked and analysed and a draft report prepared. Fieldwalking finds were assessed and their distribution plotted according to period and type. Field drawings were checked and from them final illustrations prepared for this report; other plans were added as this text was written.



Bar charts indicating the distribution of artifacts along the pipeline route across Dane Field, near Pirton.



Squares 56 to 58 equate approximately to squares 4 to 6 above.

Figure 4: Distribution of Artifacts

3 Results (Fieldwalking)

3.1 In total, fifty-eight grid squares were walked during the survey, producing three hundred and twenty-eight finds, an average of 5.65 finds recovered from each square. The artifacts were assessed according to period and type (see figure 5), and the distribution of each category analysed.

The sample of red tile fragments (approximately six fragments per square) was dealt with separately. The spread of tile appeared to be uniform across the area, with a wide date range encompassing the later mediæval to post mediæval period. No Romano-British tile fragments were included in this category. A precise, datable tile series has yet to be established for this locality, therefore the material from this survey will be classified by fabric type, and a collection kept for future reference.

3.2 The undatable finds - oyster, slag and undiagnostic metal objects - together accounted for 9.2% of the material recovered. Eleven fragments of oyster shell were fairly evenly distributed along the route, as were the ten nails and eight other iron objects (including two broken coulters blades and a horseshoe). The single piece of slag (iron?) came from SH2 at the northern end of the pipeline section.

3.3 The datable finds were organised into six categories: Post-Mediæval, Mediæval, Anglo-Saxon, Romano-British, Pre-Roman Iron Age and Bronze Age. No other periods were identified by the artifacts.

Post-Mediæval material accounted for 47.8% of the artifacts recovered during the survey. These included fragments of clay pipe stem, willow pattern china and similar ceramics, brown glazed pottery and modern glass. Possibly the most interesting find in this category was a sixteenth-century copper alloy trade token (SH25: 13/D). The post-mediæval material presented a uniform distribution with no anomalies; the information was collated and retained, although considered to be largely irrelevant to the current investigation.

The Mediæval period was represented by numerous sherds (fifty-three) of well-fired, fine red or grey sandy wares, occasionally displaying decoration or glaze, and forming 16.2% of the total number of finds recovered. The bar chart (figure 4) reveals a varied distribution pattern. A large anomaly was recorded on sheet 2 (square 2), with lesser peaks at square 6 and square 38 (see discussion). The greater concentration of material appears to be to the north of field 0048, diminishing to south, with slight evidence of demarcation zones (i.e. 36 to 40). The majority of the material falls within the date range twelfth to fourteenth centuries.

Three sherds of pottery represented the Anglo-Saxon period. All these were of similar fabric: a handmade, hard-fired, flint tempered grey ware with oxidised surfaces, indicative of a mid-Saxon date (seventh to ninth centuries). The locations were unevenly spread along the pipeline route, south of the truncated hedgerow field boundary (SH54: 6/L, SH46: 6/I, SH22: 3/T).

The Romano-British finds were of great interest, especially in the light of discoveries within the trial pits (Pits 6 to 10) in the geophysical survey area (see Results 4). A significant concentration of finds from the northern end of the pipeline corridor (SH2) steadily diminished as the survey progressed south, levelling out to a 'background quantity' of one or two finds per square forming a fairly regular distribution pattern over the remaining route.

The complete body of evidence totalled eighty fragments of pottery. The majority of the sherds (seventy-four) were of coarse wares, manufactured between the first and fifth centuries, and not susceptible of more specific dating. Of these, 52% were red sandy wares, and 48% were coarse grey sandy wares (including Much Hadham wares). The remaining six sherds were grouped in a few squares near the northern extreme of the pipeline section, in the vicinity of the geophysical survey area (see figure 2). The pottery from this area was considerably more varied than the above. Square 5 produced

one piece of red Oxfordshire ware (third or fourth century); square 6 produced two fragments of Oxfordshire ware, one piece of undecorated second century samian and one sherd of colour coated ware (second or third century). A single piece of Black Burnished Ware (category 2, second century) was recovered from square 57.

Only two sherds of Pre-Roman Iron Age pottery were recovered. One was a small piece of black 'Belgic' pottery (SH11: 19/P) and the other, a fragment of handmade, quartz-tempered grey ware with incised decoration (SH20: 4/D). Both can be loosely dated to the Late Pre-Roman Iron Age.

Evidence for Bronze Age activity was also minimal. The survey recovered no pottery of this date, but three evenly distributed lithics: a struck flake (SH3), a waste flake (SH23: 2/C) and a small backed scraper (SH47: 15/C) were of this period.

The mediæval and Romano-British categories produced large quantities of material (see figure 5), with distinctly uneven distribution patterns. These finds were analysed referring to the overall grid squares for location; more detailed analysis for the distribution within each square was considered unlikely to produce more definite results. Bar charts were constructed (figure 4) to illustrate the distribution of material in each category. Examining these charts it must be borne in mind that squares 19 and 20 overlap, and that square 25 and squares 56, 57 and 58 equate approximately to square 26 and squares 4, 5 and 6 respectively (see plan, figure 2).

Period	Quantity of Finds Percentage		Average per Square
Post-Mediæval	157	47.8%	2.7
Mediæval	53	16.2%	0.9
Anglo-Saxon	3	0.9%	N/A
Romano-British	80	24.4%	1.4
Iron Age	2	0.6%	N/A
Bronze Age	3	0.9%	N/A
Oyster	11	3.4%	} 0.52%
Undatable{ Slag	1	0.3%	
Metal	18*	5.5%	
TOTALS:	328	100.0%	5.65

* includes ten nails

Figure 5: Quantity of Finds by Period

PIRTON

Magnetometer Survey

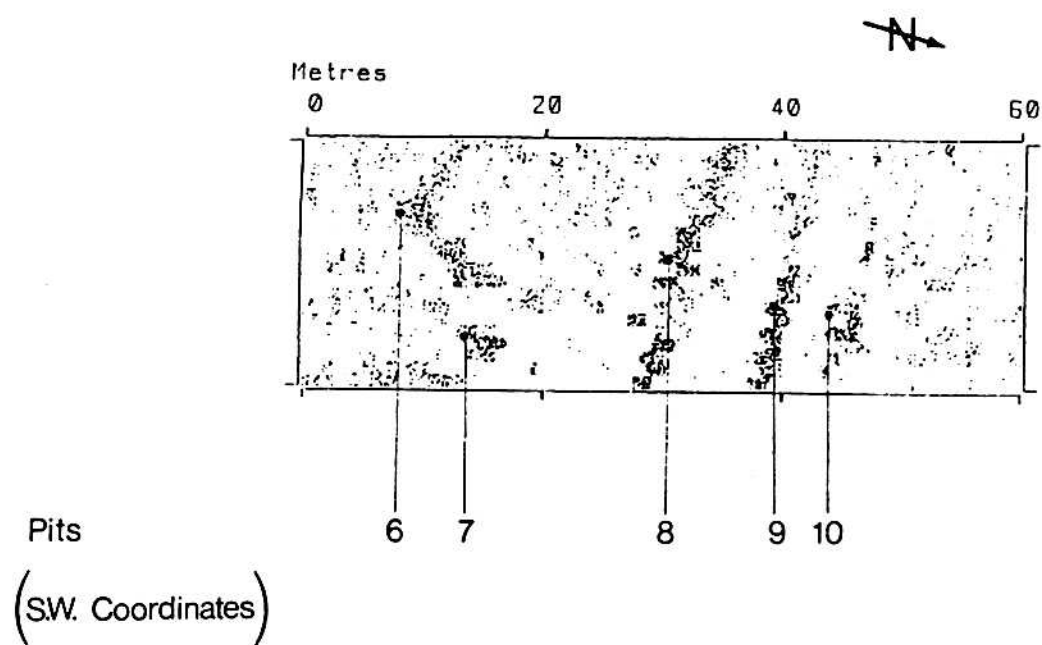


Figure 6: Pirtion, Magnetometer Survey

4 Results (Trial Pits)

4.1 Pits 1 to 5, general sampling pits.

Pit 1 Sheet 54: 7/T. Surface level 84.15m OD (see figure 7, below).

The pit was located on the pipeline route near Wood Lane in field 6600 (see figure 2), as part of the general sampling process across Dane Field. Speculation concerning this area was fuelled by the recovered of a fragment of Anglo-Saxon pottery from this area (see fieldwalking results).

The ploughsoil [1] (a slightly stony matrix of brown/grey silty clay loam) was removed to a depth of 0.32m, revealing a featureless layer of light greyish brown silty clay with 5% small chalk lumps ([2]). This was interpreted as a layer formed at the interface of the ploughsoil and the subsoil, where deep ploughing had disturbed the latter causing a mixing of characteristics. Layer [2] proved to be very shallow (20 to 80mm) and was removed to expose the surface of the subsoil [3]. This was composed of 95% chalk lumps (150mm diameter) in a silty, weathered chalk matrix. No features were visible.

The only finds were recovered from the ploughsoil and consisted of two large fragments of post-medieval tile, one piece of clay pipe stem and two sherds of post-medieval pottery.

Pit 2 Sheet 48: 15/P. Surface level 83.45m OD (see figure 8, below).

This pit, together with pit 3, was dug on the high ground to the south of field 0048 (see figure 2), within a one hundred metre rectangular area marked out along the pipeline route by yellow geophysical survey pegs. Despite the negative magnetometer results, a trial pit survey was still required to investigate this section of the field.

A 0.3m depth of moderately stony, mid brown silt/clay loam ploughsoil ([4]) was removed to reveal a similar matrix with a greater percentage of small chalk lumps (20-30%). This 0.3m deep layer ([6]) was interpreted as a buried ploughsoil, with what appeared to be a small animal burrow in the surface. Below layer [6] lay a shallow (0.1m) spread of clayey silty loam with 70% medium chalk lumps and occasional medium flints (layer [11]); this appeared to be a mixture of the weathered subsoil and material similar to layer [6], presumably the result of early ploughing. This layer was excavated to expose the natural, featureless, weathered chalk surface below ([13]), which was similar to layer [3] in Pit 1.

The modern ploughsoil ([4]) produced seven fragments of post-medieval red tile. The buried ploughsoil ([6]) produced two fragments of medieval tile and a very abraded Romano-British grey ware sherd. Layer [11] contained no tile, but furnished two unabraded sherds of hard fired, handmade, flint tempered coarse grey pottery of

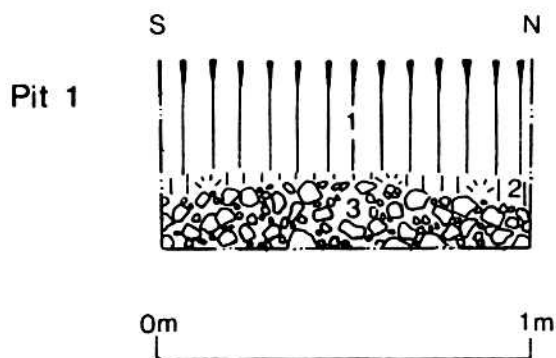


Figure 7

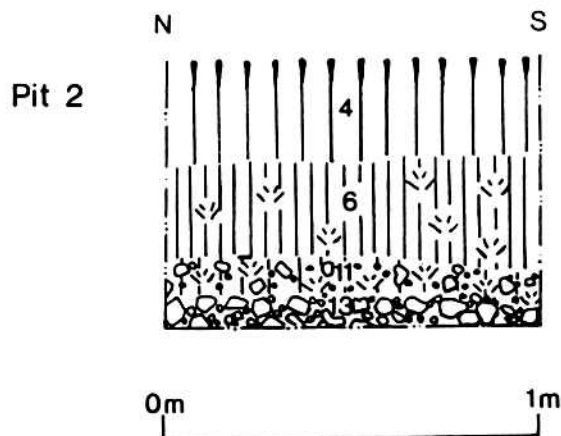


Figure 8

probable mid Saxon date (seventh to ninth century), similar to sherds recovered in the same area during fieldwalking (ie. SH45 and SH54), indicating the possibility that layer 11 is a surviving fragment of Anglo-Saxon ploughsoil.

Pit 3 Sheet 45: 8/F. Surface level 82.63m OD.

Excavated in the same general area as Pit 2; the modern ploughsoil ([5]) in Pit 3 was identical to layer [4] in Pit 2 and was removed to a similar depth (0.3m). The next layer ([8]) was similar to the modern ploughsoil, with slightly less organic content and a higher proportion of chalk lumps; this layer was interpreted as a buried ploughsoil and may be stratigraphically the same as layer [6] in Pit 2. Layer [8] was 0.14m deep, and after excavation exposed layer [10], an archaeologically sterile stratum of clayey chalk silt containing 90% medium grey chalk lumps. This layer was removed and proved to be a shallow weathering horizon above the undisturbed natural chalk subsoil ([16]).

The modern ploughsoil produced three fragments of mediæval to post-mediæval red tile. One fragment of mediæval tile was recovered from the buried ploughsoil ([8]), possibly indicating a *terminus post quem* for this layer.

Pit 4 Sheet 37: 6/A.. Surface level 79.08m OD.

Pit 4 was located on the proposed pipeline in approximately the centre of the southern area of field 0048, immediately south of the steep gradient leading down into a distinct east-west oriented field in the landscape. This position was dictated by the need for a fairly regularly-spaced sample along the pipeline route.

The grey-brown organic clay silt loam ploughsoil ([7]) extended to the usual depth of 0.32m before reaching the surface of layer [9], a mid grey-brown silty clay loam matrix identified as a buried ploughsoil. 0.43m beneath the surface of this layer lay the uncontaminated natural chalk subsoil ([12]).

Two fragments of red (possibly mediæval) tile were found in the ploughsoil. No other finds were recovered from this trial pit.

Pit 5 Not on grid. Surface level 76.80m OD (see figure 9, below).

Pit 5 was dug on the crest of the central ridge in field 0048, twenty metres north-east of the hedgerow end, at the point where the pipeline route alters direction (see figure 2).

A suggestion during fieldwalking, that the number of struck flints on the surface increased around this point subsequently proved to be groundless, the flints resulting from plough action disturbing natural deposits close to the surface on this eroded spur. Nevertheless, the area was considered worthy of investigation, particularly since within two and a half metres north-west of this pit was a subrectangular subsidence of unknown origin, grave-like in appearance. The position of Pit 5 also satisfied the requirements of overall sampling procedure.

The modern ploughsoil on the ridge ([20]) was a moderately flinty mid grey clay silt loam, less humic than the soil to the south, and considerably less deep (0.2m). Below the modern ploughsoil lay a tier of mid grey clayey silt ([19]), disturbed by modern ploughing but otherwise apparently natural, a layer of weathered material lying directly above the natural subsoil ([43]).

The modern ploughsoil ([20]) rendered two sherds of hard fired, slow wheel turned, gritty pottery, possibly late Romano-British or late Anglo-Saxon in date. Layer [19]

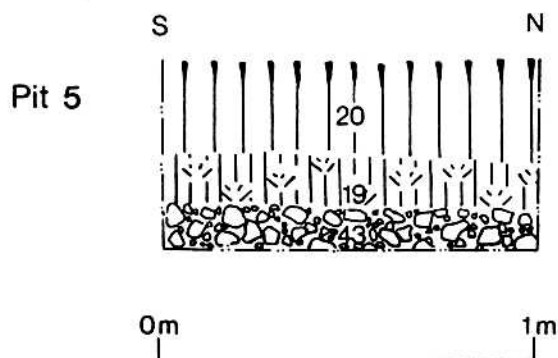
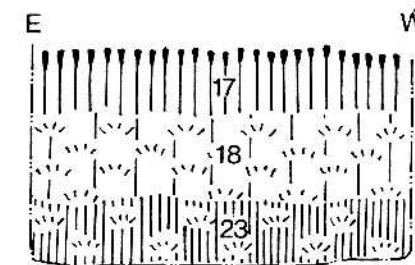
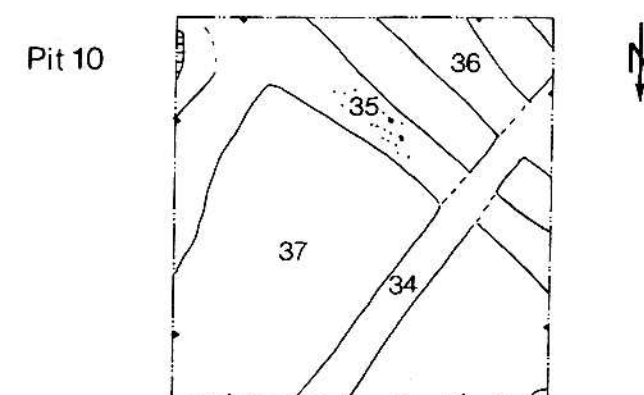
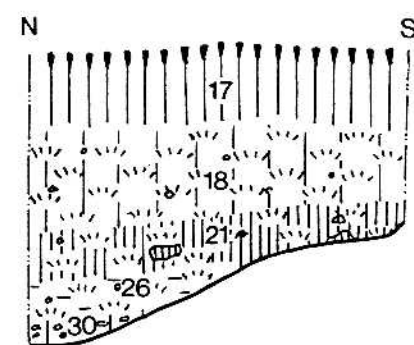
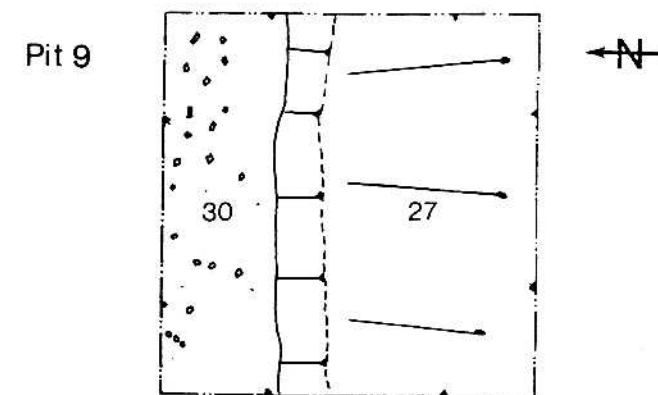
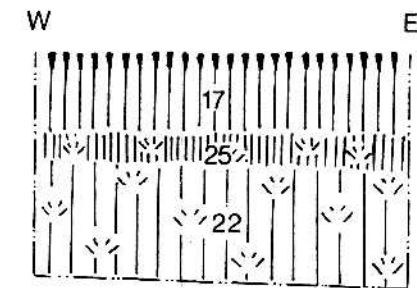
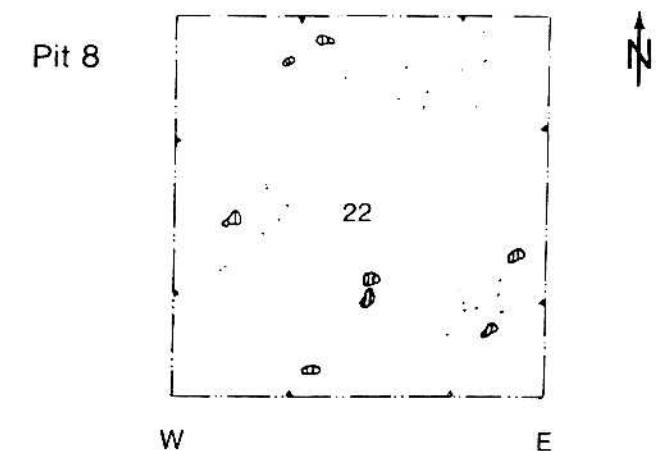
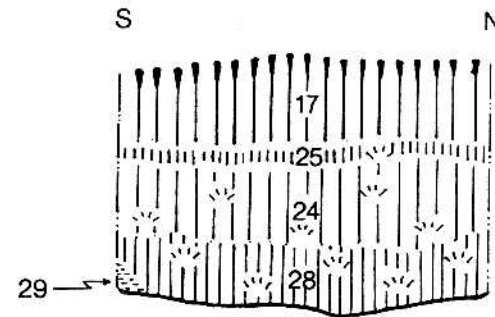
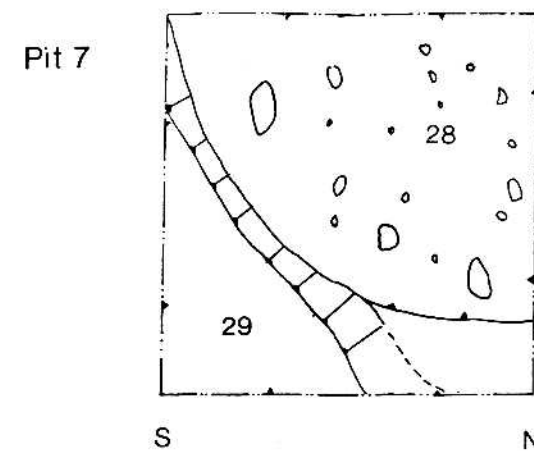
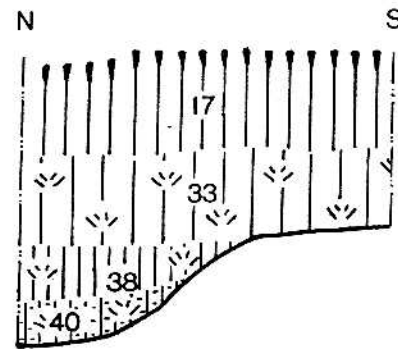
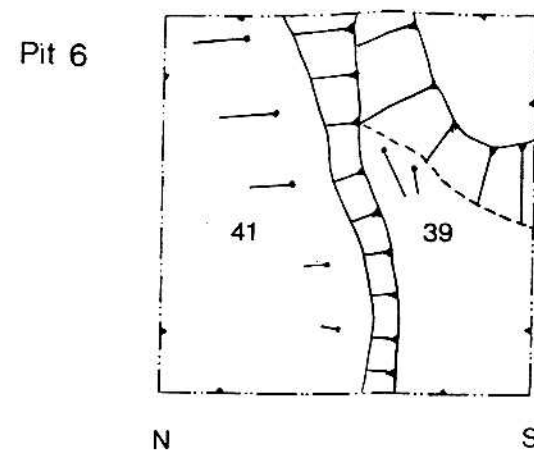


Figure 9

PIRTON, Geophysical Area Test Pits



Key	
	Flint
	Chalk
	Chalk Flecks
	Pottery
	Tile Fragments

0m 1m

produced two fragments of post-medieval red tile, probably resulting from contamination from above.

4.2 Trial Pits 6 to 10, the Geophysical Survey Area. (Locations figure 6, details figure 10).

The geophysical survey area was situated 55.5m from Point A, at the north of the pipeline route (see figure 2). This region of field 0048 is low lying with a considerable depth of ploughsoil resulting from slopewash deposits.

Pit 6 SW grid: 6/8. Surface level 66.99m OD.

Pit 6 was located on a distinct anomaly forming part of a large semi-circular feature shown on the magnetometer survey readout.

The ploughsoil ([17]) excavated in Pit 6 was common to this area of the field, composed of a dark grey-brown, slightly stony clayey silt loam. The 0.3m depth of modern ploughsoil produced post-medieval ceramics and a fragment of an animal long bone. Beneath this layer a 0.26m deep stratum of similar, slightly less organic material, assumed to be an earlier ploughsoil, produced two sherds of Romano-British grey ware (first to fourth centuries AD) and a reticulated fragment of bone. This layer ([33]) was removed to reveal two layers: [38], a light brown silty clay with 5% chalk flecks identified as a potential fill of a feature, and [39], a whitish brown clayey weathered chalk. [38] was excavated from the north-east part of the pit, confirming that [39] was the natural subsoil truncated by an irregularly curved cut [42].

Layer [38] furnished a mixture of artifacts: one sherd of grey ware, an abraded piece of copper-stained burnt bone, and a fragment of possibly medieval green glass, suggesting a Romano-British date with contamination from above.

Layer [38] was removed to reveal a vague horizon of similar material 150mm below. This layer ([40]) was 220mm deep and produced one pig long bone and no datable artifacts. The surface of the following layer was exposed but not excavated. Layer [41] was similar to the surrounding strata but with 25% chalk rubble inclusions. By this stage a sufficient depth of fill had been removed ([38] and [40]) to expose the profile of the negative feature (cut number [42]) cut into the natural subsoil [39] (see figure 10) and sufficiently to establish a Romano-British date for the upper fills.

Pit 7 SW grid: 16/14. Surface level 66.60m OD.

Pit 7 was located over a possible feature, three metres in diameter, identified by the geophysical survey.

The modern ploughsoil was removed (producing two medieval red tile fragments) to reveal a second layer of modern ploughsoil, lacking the straw clumps buried during recent cultivation ([25]). Four fragments of red tile, two abraded pieces of animal bone and one piece of dark glazed post-medieval pottery were recovered from this layer, as well as one sherd of Romano-British coarse shelly ware (second century in date?).

This shallow (0.05m thick) layer was stripped to reveal another remnant ploughsoil ([24]), again a mid grey-brown clay silt but with increased (15%) small chalk inclusions. Layer [25] yielded a section of clay pipe stem and one piece of red tile in addition to five sherds of Romano-British pottery (refer to the appendix for details of pottery finds) and three undatable iron nails.

This final tier of ploughsoil was removed to display two surfaces, [28] and [29]. Context [29] was a firm, light yellowish brown clayey chalky silt, similar to layer [39] in Pit 6, and was similarly interpreted as the natural subsoil. Layer [28] was a firm, dark brownish-grey clay silt loam contained within a cut ([32]), which described a north-east to south-east truncation across the subsoil (figure 10).

Layer [28] was investigated for a further 0.15m to recover datable material. Three fragments of bone, a quarter mussel shell and a hobnail, together with four fragments of coarse grey ware and an unabraded rim sherd from a samian dish, suggest that layer [28] is an uncontaminated pit fill of Romano-British date, containing domestic residue.

Pit 8 SW grid: 10/30. Surface level 66.00m OD.

Two linear features were recorded by the magnetometer survey, running parallel east to west, in line with the general field contours. Trial pit 8 was located centrally on the southernmost anomaly.

The grey-brown silty clay loam modern ploughsoil ([17]) was removed to a depth of 0.25m, exposing the surface of layer [25], an earlier modern ploughsoil also seen in Pit 7. This latter layer produced two nails and two fragments of post-medieval red tile. It was 0.12m deep and was stripped to reveal a clear horizon of firm, slightly stony, silt clay loam ([22]). Initially this was assumed to be a buried field surface, but continued excavation produced no change in the material, except an increasing yield of uniquely Romano-British pottery.

Twenty sherds were recovered, of which nine are from the same vessel, a second century coarse grey shelly ware. On reflection, it is likely that layer [22] is a fill within a large negative feature, the cut edges of which were beyond the limits of the trial pit.

Pit 9 SW grid: 13/39.

Pit 9 was dug within the densest area of the northernmost linear feature shown on the geophysical survey readout.

The modern ploughsoil ([17]) was 0.2m deep and contained no finds. The ensuing layer ([18]), a late buried ploughsoil of similar matrix, produced a varied selection of artifacts, including several sherds of fine glazed china and brown glazed terracotta, a nail and two medieval tile fragments, as well as seven sherds of Romano-British pottery and a small fragment of copper alloy.

This evidence of a disturbed archaeological feature was confirmed by the following layer ([21]), a dark brown stratum of silt clay 0.15m deep containing 15% chalk rubble. This layer was archaeologically very fertile, yielding numerous lumps of ferrous slag, three sections of an iron bar or strap (30mm wide), plus four nails and sundry iron fragments; pieces of animal bone were also common, as were fragments of mortar and tile, which together with nineteen pottery sherds reflect a Romano-British date (second to third century AD).

Layer [21] was assumed to be a ditch fill, and further examination revealed that it was contained within a linear feature aligned east-west ([31]) and cut into the natural greyish yellow chalky silt subsoil.

A subsequent layer of moderately stony dark brown silt clay with 25% chalk rubble ([26]) was uncovered; this layer was 0.1m deep and produced three fragments of bone, two nails and ten sherds of Romano-British pottery. Below layer [26], a further layer ([30]) was partially excavated and rendered three lumps of ferrous slag, one piece of poorly-fired tile, three sherds of Romano-British coarse ware and one fragment of grey ware with a red slip and *en barbotine* decoration.

The profile of the negative feature was, by this stage, well established, and excavation was discontinued.

Pit 10 SW grid: 14/44.

Pit 10 was located centrally over a circular (?) anomaly, similar in size to the example sampled by Pit 7.

Beneath 0.18m of modern ploughsoil, which produced two nails and a piece of post-medieval pottery, lay the buried grey-brown clay silt ploughsoil ([18]) also seen in Pit 9. This layer furnished two scraps of iron, one piece of medieval tile and ten sherds of coarse Romano-British pottery, as well as a well-preserved copper alloy radiate coin of Diocletian (an Aurelianus inscribed IOVI CONSER [AVGG] on the reverse, RIC 35-40, an issue of 287/8 AD).

Layer [18] was stripped to reveal layer [23]. This layer, a uniform stratum of mid brownish grey silty clay with minor chalk rubble inclusions, produced numerous small lumps of iron slag, and a range of eleven Romano-British pottery sherds. This matrix did not appear to be contained within any feature, and may represent an early ploughsoil, possibly Romano-British in date.

Layer [23] was stripped to reveal five linear discolorations in the natural subsoil ([27]). These marks were interpreted as the result of early plough action scoring the subsoil and contaminating the furrows with material from above. The furrows were tested and found to be approximately 0.02m deep, with flat or shallow v-shaped bases. The orientations suggest either two phases of ploughing, with the north-east to south-west orientation imposing over the other and thereby indicating the sequence, or that cross-ploughing, first in one direction and then the other, was practised.

No finds were recovered from these furrows; the fills ([34], [35] and [36]) appeared to be a continuation of layer [23].

5 Discussion of Results

5.1 The most important result of the combined archaeological surveys is the discovery and identification of a previously unknown Romano-British settlement site in the area of TL 134318. Interestingly, this is situated in the "Cat's Brains" area of Dane Field (see section 1.2) and may represent a precursor to the presumed Anglo-Saxon cemetery (and presumably its associated settlement) which were apparently close by.

5.2 Although the surveys did not locate early Anglo-Saxon occupation, the evidence indicates that the cemetery was close to the pipeline route and it may be a little to the west or east.

5.3 The Romano-British site seems to be fairly extensive and to be reasonably well-preserved under the modern plough-soil. A date range for occupation spanning at least the second and third centuries appears to be indicated. It is strongly recommended that further investigation of this site occurs before pipeline construction.

5.4 The presence of Anglo-Saxon settlement and activity in the vicinity may be indicated by a few finds from the fieldwalking. Three relevant sherds came from fieldwalking the southern half of the survey area, while Pit 2 produced similar pottery (seventh to ninth century) from a buried ploughsoil. Perhaps this material comes from cultivation of land to the south of a settlement nearer the located Romano-British site.

5.5 The sizable anomaly from Square 2 on the Mediæval graph may indicate a waste/manure heap, regularly amassed at this point to spread over the field. It may further be suggested that the 'regular' grouping of finds may reflect the boundaries of earlier fields.

5.6 The amount of post-mediæval material found over the northern boundary of field 0048 could either be the result of slope wash deposition or perhaps the continuation of the practice of piling up the rubbish at the bottom of the slope prior to spreading it over the field.

5.7 The more varied pottery types recovered from the test pits in the geophysical area may indicate a disparity between settlement dates and field use, or that the finer wares were not finding their way into the manuring with the same regularity as more everyday wares, and represented a smaller proportion of the pottery in use.

Appendix: Pottery from the Trial Pits by A J Offord

NB: All pottery is Romano-British except where stated.

Pit 2

- [6] 1 grey ware sherd.
- [11] 2 mid Saxon hard fired, handmade flint tempered grey ware sherds (seventh to ninth century AD)

Pit 5

- [20] 2 gritty grey ware sherds.

Pit 6

- [33] 2 grey ware sherds.
- [38] 1 grey ware sherd.

Pit 7

- [24] 2 grey ware sherds.
- 1 red ware sherd.
- 1 grey shelly ware sherd.
- 1 colour-coated sherd (second to third century AD).
- [25] 1 grey shelly ware sherd.
- [28] 4 grey ware sherds.
- 1 samian sherd.

Pit 8

- [22] 7 grey ware sherds (four from the same vessel).
- 2 red ware sherds.
- 9 grey shelly ware sherds.
- 2 black-slipped red ware sherds.

Pit 9

- [18] 3 grey ware sherds.
- 1 red ware sherd.
- 1 grey shelly ware sherd.
- 2 Nene Valley colour-coated sherds (mid second century AD).
- [21] 9 grey ware sherds.
- 4 red ware sherds.
- 5 red shelly ware sherds.
- 1 samian sherd.
- [26] 3 grey ware sherds
- 2 red shelly ware sherds.
- 5 grey shelly ware sherds.
- [30] 2 grey ware sherds.
- 1 red ware sherd.
- 1 colour-coated sherd with *en barbotine* decoration.

Pit 10

- [18] 2 grey ware sherds.
- 3 red ware sherds.
- 4 grey shelly ware sherds.
- 1 cream/buff ware with internal red slip (Baldock fabric 20?).
- [23] 5 grey ware sherds.
- 1 red ware sherd.
- 1 grey shelly ware sherd.
- 2 red very coarse shelly ware sherds (Baldock fabric 2?; Late Pre-Roman Iron Age).
- 1 grey ware sherd with red slip.
- 1 grey ware sherd with cream slip.

The grey wares (fabric 11) include some Much Hadham pottery; some of the red wares are Oxfordshire wares; the shelly wares (fabric 4) are Bedfordshire and Northamptonshire wares; the cream/buff ware (fabric 20) is possibly a *Verulamium* ware.