

**INTERIM REPORT FOR THE WATCHING BRIEF AT
FAIRLOP QUARRY EXTENSION,
HAINAULT ROAD,
REDBRIDGE.**

SITE CODE: IG HR 96 (ii)

**ACC. NO.: LDPEM/AC/IG/098
GRID REF: 4630 9050**

**By: Alice Hodgins
22.1.97**

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1. ABSTRACT

1.1 An archaeological Watching Brief took place on the site of Fairlop Quarry Extension, Hainault Road, Redbridge between 27.8.96 and 30.9.96, during the stripping of topsoil in advance of gravel extraction. The work revealed evidence of enclosure ditches relating to a possible Roman field system as well as numerous post holes which may indicate settlement. A cluster of five cremation burials were recorded towards the southern end of the site. The bulk of finds collected were of a late Roman date.

2. INTRODUCTION

2.1 An archaeological Watching Brief was carried out during topsoil stripping at the proposed extension to the gravel works at Fairlop Quarry, operated by Redlands Aggregates Limited. The work was undertaken by Newham Museum Service. It commenced on 27.8.96 and finished on 30.9.96.

2.2 The work was commissioned by Redlands Aggregates Ltd for submission to the Local Planning Authority (the London Borough of Redbridge) in fulfilment of condition 35 of planning consent given for Application no.1661.95. The Watching Brief was carried out in advance of the extraction of gravel across the entire area. (See Fig. 1B for Site Location.) This represented Phase II of the archaeological works, and initially involved the area designated as the haul road and areas 1A, 1B and 2A (See Fig. 2). Areas 2B, 3, 4, and 5 will be investigated in following seasons.

2.3 Although area 2A was included in the remit of the Watching Brief, time limitations and budget constraints meant that it could not be recorded. This area had however already been investigated and recorded as part of a strategic trenching pattern during the earlier Evaluation (Hodgins, 1996).

2.4 The aim of the Watching Brief was to record the extent of archaeological activity across this area and to investigate and record by photograph and context sheet. Any remains found were also plotted fully and located into the National Grid. The Watching Brief was also to sample excavate and collect dating evidence where ever possible.

2.5 Newham Museum Service would like to thank Redbridge Borough Council Land Management Division and Redlands Aggregates Ltd for funding the excavation. Thanks also to Jarvis Earth Moving Contractors and Redlands Quarry Managers Tom Ross and Andy East for their help and co-operation. Thanks are also due to Lawrence Pontin, English Heritage Planning Advisor (North East London), Mark Beasley for the surveying and plotting of features, Pamela Greenwood for her work on the finds, and especially the site staff Mark Beasley, Alison Telfer, Sarah Harding, Shaun Tamblyn, Ian Hanson, Steve Waltho, Paul Thrane, Julia MacLaurin, and Lesley Sammons. The project was negotiated and directed by Mark Turner on behalf of N.M.S. The site was supervised by the author.

3. ARCHAEOLOGICAL METHODOLOGY

3.1 The methodology followed the recommended model laid out in Management of Archaeological Projects II (English Heritage, 1991). It conformed to the standards set out in Guidance Paper No.3 (Standard Practices in Archaeological Fieldwork) and No.4 (Archaeological Watching Briefs) produced by the London Division of English Heritage (English Heritage, 1992). All relevant Health and Safety Regulations were adhered to.

3.2 An Archaeological Watching Brief was carried out at Fairlop Quarry Extension. Work began on the 27 August 1996 and finished on the 30 September 1996. A core team of two were present for the duration of the project, in order to excavate a sample of the features revealed and to plot, using a Total Station, the archaeology identified. Additional archaeological staff were called in over the course of the project, as required, so as not to slow down the extraction process. A maximum of five members of field staff from Newham Museum Service were present on site at any one time.

3.3 The Watching Brief was required as cropmarks had identified a significant archaeological landscape immediately south of, and at the northern end of, the area to be extracted: The presence of this landscape had been confirmed by further excavation work at Cell 6 of the quarry in 1994, and the Evaluation at Fairlop Quarry extension undertaken between 26.4.96 and 31.5.96. After the removal of the topsoil the extraction process was to destroy any remains of both known and unknown archaeology. It had also become clear during the Evaluation of the northern field that an absence of cropmarks did not necessarily preclude the existence of archaeological remains. The Watching Brief was designed as part of a programme of works, the purpose of which was to record archaeology in areas 1A and 1B, 3, 4 and 5, this phase focusing on 1A, 1B and the internal haul road. The northern section of 1B, 2A, and 2B had been covered by the Evaluation and the most prominent features identified and transposed from the Aerial Photographs. Any information collected from the evaluated area was additional.

3.4 During Phase II of the extraction work, consisting only of the western portion of the site at Fairlop Quarry, a limited archaeological team was present to monitor the stripping of topsoil and to evaluate and record any archaeological remains visible in the exposed subsoil. The extraction of subsoil was also supervised in its initial stages on the premise that an earlier phase of archaeological activity may be observed cutting the natural gravel. (See Fig. 2 for area covered by this Watching Brief.)

3.5 Two 360° tracked mechanical excavators with flat buckets driven by Jarvis Earth Moving Contractors were used to remove the topsoil. It was not possible to watch and record the archaeology revealed by two machines simultaneously. So, while one machine worked at stripping the topsoil from the far north of the site (areas 1B and 2A), the progress of which was checked at regular intervals by the supervisor, the digging team followed the second Hymac which began in the south and worked progressively northwards through areas 1A and 1B. The archaeological arrangement in the north of the site had been recorded through strategically placed trenches during the course of the earlier Evaluation (Hodgins, 1996), and the field system ditches transposed from the aerial photographs, so work was initially concentrated on the unknown southerly areas. Archaeological work in the most northerly part of the site was limited to plotting with an Total Station and recording by context sheet with

additional excavation when it was necessary to identify the limits of features or to recover finds.

3.6 The original flat buckets were changed to toothed ones for the subsoil stripping. An archaeologist was present at the start of the subsoil removal but, in order to clear the way for gravel extraction proper (including only 'clean' gravel) both the subsoil layer and approximately 0.30m-0.50m of the natural gravel were removed as one. Monitoring the progress of these excavations was not within our remit as no archaeological remains would survive this process.

3.7 A predictive model was necessarily established early in the Watching Brief in order that anthropogenic evidence could be distinguished from naturally formed depressions and deposits. Initially all features encountered were cleaned and half sectioned. Fill colour and soil type, presence of inclusions and finds, shape of cut in plan, and uniformity of profile when sectioned were all noted. On the basis of this information it was possible to compare feature types and some excavated features could then be rejected as probably naturally occurring. All archaeological features were recorded. It was necessary to tighten up this predictive model as the work progressed, and to recognise the difference between probable anthropological evidence which was recorded, and probable natural depositions which were not. Where doubt existed the feature was half sectioned before a decision to record was made. In this way approximately 30% of the features identified were written off as being naturally formed. Of the material that had been labelled archaeological, a sample of the more discrete features (e.g. pits and post-holes) were half sectioned and fully recorded, the rest were recorded pre-excavation and plotted using a total station. The two NW-SE ditches in 1A were slotted at intervals along their length, no more than 30 metres apart, but the enclosure ditches within 1B were slotted more infrequently. It is possible that up to 20% of contexted material was not actually anthropogenic as this system was not ideal, but due to the nature of the Watching Brief, the large area covered and limits on time and staffing, the use of a predictive model was vital.

3.8 All features identified and classified as archaeological have been recorded using the single context method and plotted using a Total Station. A photographic register was kept to selectively record ditch and pit sections, groups or alignments of post holes where possible, the cremations and any other significant feature or deposit such as those containing fill sequences or larger pits and spreads. 100% environmental samples have been taken of all the cremations and a limited number of burnt post or pit fills have been kept. Where groups or alignments of pits and post holes were identified on site they were sample excavated and a full record was made. Isolated features were contexted and plotted pre-excavation.

3.9 All surface finds and those associated with specific fills were labelled with the appropriate location and context number and sent to Pamela Greenwood, prehistoric and Roman pottery specialist for Newham Museum Service, for processing.

3.10 The finds and archive will be transferred to the London Borough of Redbridge Museum at the end of the project.

3.11 The plotting and sample excavation of a percentage of known archaeological features was essential in order to enable planned but not excavated features to be interpreted. The

predictive model instituted during this Watching Brief may be developed in future phases alongside a refined sampling strategy.

3.12 The site was supervised by Alice Hodgins, surveyed by Mark Beasley, and managed by Mark Turner on behalf of Newham Museum Service.

4. SUMMARY OF RESULTS

4.1 Cropmarks transposed from aerial photographs had already accurately identified archaeology in the northernmost field (which is bordered by Forest Road to the north). An archaeological Evaluation carried out by Newham Museum Service between 26.4.96 and 31.5.96 uncovered evidence of a network of late Roman field system ditches in the area to be exposed in this watching brief within 1B. In the Evaluation, trenches had been deliberately located over cropmarks representing the field system, which supplied windows into the archaeology of this area. The Watching Brief provided a much fuller picture. Cropmarks identified from the aerial photographs had also been used in locating archaeological evidence immediately to the south of the area to be covered by this phase of work (Cell 6 of the Quarry, Mark Turner, 1994.). The aerial photographs of the central part of the site, between these two priority zones (1A and the southern part of 1B), had provided no similar indications of archaeological activity. A Watching Brief of the whole area provided the opportunity to investigate the archaeological potential of a large unknown area between two perhaps related centres of archaeological activity spanning the Bronze Age to the late Roman period.

4.2 The haul road, Areas 1A and 1B were all stripped of topsoil down to the level of the naturally deposited subsoil. The focus of attention during the course of the Watching Brief was on identification of, and plotting the position of, all apparently anthropogenic evidence. Some of the features, particularly the ditches, were rich in finds but, as it was only possible to excavate a sample of the contexts identified and recorded, a much reduced assemblage of pottery was collected. The bulk of material retrieved points to a later Roman (probably 3rd or 4th century AD) period of occupation. A small number of prehistoric sherds appearing mainly, but not solely, in contexts associated with a later date were also collected.

4.3 The site provided little evidence of stratigraphic relationships and features recorded spanned a large area. As a result of this many of the features could not be phased by date or by placing them within a stratigraphic chronology. The subsoil brickearth was patchy in some areas and was not present across the entire site. Topsoil was removed and gravel exposed directly beneath it in the south (along the haul road); in the north of 1B where the two enclosure ditches were located; and in the western section of 1A (where the two Roman NW-SE ditches were found). Subsoil covered the southern half of 1B and eastern part of 1A. Although the deposition of gravel pre-dates that of subsoil, archaeology of the Roman period appeared to be cutting at both levels. Interestingly, evidence appearing to represent the most organised activity was located on gravel not subsoil. This may be for drainage reasons.

4.4 Due to the lack of stratigraphic relationships and because finds were not retrieved from many of the features, it has not been possible to date every feature or always to phase them accurately within the chronology of events. Phasing in some cases therefore has had to be broad. However, six phases of activity were identified of which five were anthropogenic. Phase I consists of natural gravel. Phase II denotes another naturally deposited layer, the brickearth subsoil. Phase III constitutes a grouping of a small number of features which, although they produced finds covering a wide date range, are most likely to be an indication of possible late-middle Iron Age activity. Phase IV represents most of the activity on site. It has been split into two sub-phases; IVi which includes features (pits, post holes ditches and a group of cremations) whose fills contained material dating to a predominantly late Roman period (3rd and 4th century AD); and IVii which contains features, mainly pits and post holes,

which produced no dating evidence but bore some relationship, by merit of similar fill type, shape in plan, or alignment with, or as part of a group of other dateable Roman features. It is possible that some of the features within IVii pre-date the Roman period but unlikely that they are later since there is no evidence of a post-Roman presence until the land became utilised agriculturally in the mid 19th century. Phase V denotes a 19th/20th century phase when mole drains were laid in order to drain the land. Finally, phase VI represents the topsoil.

4.5 PHASE I

4.5.1 Phase I relates to the underlying geology and natural processes affecting the site prior to human activity. Natural deposits of gravel were present on site but across much of the area, apart from to the far north, south and west this was masked by subsoil. The site forms part of Fairlop Plain and lies, in the west and south, on one of the Boyn Hill (river terrace) Gravels, and on London clay to the north and east. (See Geological Survey Map 257 (Ordinance Survey, 1976)).

4.6 PHASE II

4.6.1 Phase II represents the subsoil, a fine floodwashed brickearth, which probably accumulated by fluvial or colluvial action. This brickearth subsoil overlay the gravel and provided an archaeological horizon, which covered the centre of the site including the southern half of 1B and the north-eastern two-thirds of 1A. At this level much of the data was collected. A number of features initially thought to be archaeological were investigated but subsequently rejected, either because of their amorphous shape in plan, their erratic and uneven profile, or colourless (light grey) silty fill with no inclusions or finds. Features such as these were interpreted as frost hollows or cracks and natural gullies/ run off channels created by water draining, and may have occurred as a result of peri-glacial action or post-glacial erosion and weathering. Tree bowls and root channels could explain the occurrence of other non-archaeological features. The site appears to have been heavily truncated from above over the last century and a half by ploughing and the west of the site may have been affected in this way by the location here of a 1st and 2nd WW airport.

4.7 PHASE III

4.7.1 Phase III contains a possible rubbish pit (571), dated by the pottery collected from it as middle Iron Age in date and located south of the cremations on the haul road. It has been truncated subsequently by Roman pitting. Area 1A contains another pit (481) of uncertain purpose which had very similar fill, and when excavated was thought to have been associated with pits (481) and (485) located immediately to its north and east. Pit (483) contained one sherd of pottery with a possible date range of Neolithic-early Iron Age. Pits (481) and (485) produced no finds but may be contemporary if they form part of this group. To the south of area 1B was a single post hole containing two sherds of Prehistoric pot (435). This had similar fill to, and therefore may be associated with, post holes (431) and (445) to its south-east. These features together appear to form a linear arrangement on a north-west - south-east alignment.

4.7.2 Within this phase only three features (571), (483), and (435) were definitely attributable to the prehistoric period, and the date range is not specific but their presence never-the-less suggest that the site was in use before the Roman period.

4.8 PHASE IV

4.8.1 Phase IV relates to the bulk of archaeological activity on site which, from the finds, suggests a 3rd or 4th century AD late Roman period of activity. Many of the features do not have associated finds and therefore cannot be dated. Phase IV has been grouped where possible, where specific types of feature or activity occurs, or where accumulations or alignments of post holes suggest possible structural evidence. A number of the post holes appear to have been burnt but no pattern was discernible, therefore an interpretation cannot be attached. Sub-Phase IV(i) refers to the dated features, while IV(ii) denotes the undatable contexts.

4.9 PHASE IV (i)

4.9.1 The haul road produced a large group of dateable pits consisting of contexts (302), (304), (306), (308), (569), (571), (578), ditch/pit (334), and pit/post hole (350), pit/ditch (567), spread (574). There were several stratigraphic relationships within this group, but apart from the Roman pit (569) which cuts middle Iron Age pit (571), dating evidence collected did not indicate that the usage of these features spanned a timescale any later or earlier than the late Roman period. Pit (578) was dateable to the 3rd-4th century, and cut ditch/pit (566) but this unfortunately produced no finds. Although pit (304) contained 2nd century + pottery this cannot be its earliest possible date because it cuts pit (306) which dates to the later 3rd or 4th century Roman period. All other pits produced dating evidence, all of a 2nd century to late Roman period.

4.9.2 To the north of the haul road lay a group of Roman cremation burials (320), (357), (359), (361) and (364). All fills contained black ashy deposits with significant quantities of burnt bone. Some of the fills, those within cuts (357), (359), (361) and (364), also seemed to contain considerable amounts of degraded wood. This suggests that wooden containers may have been used as burial casks although no nails or other metalwork was found within the fills. Cut (361) which contained the fragmentary remains of an entire (later 3rd century +) storage vessel may also have been secondarily packed within a wooden casing (see Fig. 5). Cremation (359) contained the base of a small flagon, the top of which had been lost through truncation, in its north-eastern corner, which dates to the later Roman period. Cuts (357) and (364) contained fragments of 2nd century + pottery, while (320) was very badly truncated and provided no dating evidence. Although these features were tightly grouped and a specific area had clearly been allocated for burials, their spacing was uneven, cut shape was not uniform, and depths and therefore preservation varied greatly. They had all suffered from truncation from above, probably by ploughing.

4.9.3 To the west of 1A were two boundary or drainage ditches running in a north-west - south-east direction. They were on a roughly parallel alignment but the more easterly ditch (437) spans this part of 1A from north to south (approximately 175 metres). The westerly ditch (396/398, approximately 85 metres in length) tapers out at the southern end. The two

ditches may have fulfilled the same function but, although both Roman, may not have been in use contemporaneously. They were spaced about 5 metres apart at the northern end, but where (396/398) tapers out, to the south, the gap widens to approximately 10 metres. Both ditches are heavily truncated by ploughing but what remains of (396/398) is much shallower and narrower than the more easterly ditch (437). Ditch (396/398) may have continued as did (437) but truncation has given the appearance of a terminus in the south.

4.9.4 Area 1A also contained another dateable group which had the appearance of burnt post holes. Cuts (453), (455), (457), (459), (461) and possibly (451), to the south-west of the group, all contain very dark grey black fill with considerable amounts of burnt and degraded wood and occasional chalk fragments. A number of corroded nails were also collected from the fills of these contexts. The formation of this group does not suggest structure, but heavy truncation may mean that only deeper cuts survive. The two post holes (455) and (457) containing pottery date the group to the Roman period. To the south-west of this lay a possible rectangular structure which produced no dating evidence, but may be related (see discussion in 4.10.3).

4.9.5 Further north, into Area 1B, two enclosure ditch complexes were exposed. Segments of both of these had been identified at Evaluation and were first recognised on aerial photographs. The more southerly of the two (694) was sub-rectangular in shape and measured approximately 40 metres east-west by 40 metres north-south with an entrance 12 metres across, placed centrally within the northern ditch. Roman finds were collected. Pit groups were located externally, immediately west, east and south of the enclosure ditch with pits and post holes also situated within its confines. See Phase IV (ii) for discussion. To the west of its north-west corner was another associated east-west running ditch (752) which on the aerial photographs appeared to connect with enclosure (694). To the south of (694) was another east-west ditch (762) 66 metres long, parallel to and just over 20 metres from the southern edge of (644). This ditch had an additional off-shoot (764) running from it and heading towards the south-west corner of (694) on a south-east, north-west orientation (see Fig. 4).

4.9.6 North of this rectilinear enclosure was the western section of another enclosure (824). The visible section of this measured 25m east-west by 70m north-south. Only the south-western corner was discernible and appeared very rounded in comparison with the square corners of enclosure (694). This enclosure appeared to have been sectioned off internally with a dividing ditch (826). South of this, another small section of ditch (834), orientated east-west, was identified. Pottery of a late Roman 3rd century + date were retrieved from enclosure ditch (824).

4.10 PHASE IV (ii)

4.10.1 Within this phase a large, dark grey spread of organic silty clay which did not appear to be waterlogged and so was not sampled for environmental remains (557) separated the north of the haul road from Area 1A. It may have been a pond but no finds were retrieved so the date remains uncertain. Human activity within this potentially broad phase consists of numerous pits and post holes (mainly silt filled but which sometimes included burnt fills or were packed with fire cracked flint). In some cases these contexts may be structural and in an attempt to group some of them, sub- semi- circular accumulations of post holes possibly

indicating roundhouses, and linear alignments potentially associated with fence lines, were noted.

4.10.2 An undated line of pits/post holes ran north-west to south-east down the centre of the haul road between the pit group and the cremations. It included contexts (576), (326), (324), (322) and (314). A semi-circular accumulation of post holes lay in the south-west corner of Area 1A to the west of (437). This included context numbers (376), (374), (382), (380) and (378). A second speculated semi-circular grouping lay more centrally and to the east of ditch (437); this included context numbers (628), (620), (618), (614), (612) and (610). A small grouping of possibly connected post holes to the north-east of (437) contained (405), (407), (407), (409), (411) and (413). Possible alignments, moving across Area 1A in a south to north direction, were found in groups containing (492), (318) and (332) running north-west to south-east and parallel to ditch (437); (553), (584), (596) and (598) parallel to ditch (437); a possible connection on south-west to north-east alignment were (394), (388), (479), (502), (500), (521), (592) and (624) running through (437); (650), (638) and (634) were in a south-west to north-east alignment; (672), (425), (670), (686), (682) and (429) orientated south-west to north-east; (417), (678), (688), (680) and (684) running south-west to north-east; and (441), (449), (419) and (403) on a south-west to north-east alignment.

4.10.3 Although (492), located towards the north-east of 1A, has been mentioned above as being one of a possible alignment of three. It also forms part of the only obvious rectangular grouping observed on the site. If this is a structure, it is aligned roughly east-west and the arrangement of post holes (492), (496) and (498) in the west mirror the group containing contexts (529), (531) and (451) to the east. The rectangular possible structure measures approximately 20m by 10m and lies immediately south-west of a 'T'- shaped formation of post holes (459), (461), (457), (455), and (453) all containing very dark woody fills, nails and Roman pottery. If this group does represent a building, its shape certainly implies a Roman influence, and it may be associated with the post hole group to its north-east.

4.10.4 From the south towards the north of Area 1B there appear to be two possible linear arrangements of post holes, both orientated north-west to south-east. The groups consist of (429), (445), (431), (435), and also (690), (692), (816), (768).

4.10.5 To the south of east-west ditch (762) a group of post holes seem to be circular in formation. This group includes contexts (816), (818), (770), (822) and (820) and could indicate a possible hut circle but produced no dating material.

4.10.6 Enclosure (694) is surrounded to its west, east, and south by pit groups whereas no features appear to restrict access to the entrance of the enclosure. Pit groups by context number include: to the west - (710), (708), (712), (714); to the east - (728), (732), (734), (740), (774); and to the south - (784), (780), (760), (778). Internally (694) contained a variety of pits and post holes with a pit containing fire cracked flint towards its north-west corner. No obvious patterns were perceived and although none of these features provided any dating evidence they do seem to have a spatial relationship with the enclosure. They may be earlier but are certainly not later than the (694) since they are very densely packed and yet no feature seems to cut any part of the ditch. All post holes and rubbish/ storage / fire pits in the groups above are probably related to the function of, and contemporary with Roman (694). They could therefore be phased within IV (i) but without having provided dating evidence this theory cannot be substantiated and have been phased within IV (ii).

4.10.7 Although there were accumulations of post holes/pits sometimes appearing to form semi-circular groupings, and alignments of features could be extrapolated, the information available made these diagnoses inconclusive. There appears to have been extensive anthropogenic activity on this site but truncation, and probable resulting loss of archaeological remains, makes interpretation of some of these groupings speculative.

4.10.8 In Area 1B, to the south- west of ditch (437), a sizeable spread of cracked flint (845) with patches of burnt daub was revealed, contained within a cut which was subsequently backfilled and sealed under a grey clayey deposit. This may represent rake out thrown into a large rubbish pit or a large (communal) fire pit. Context (845) could have been a deliberately laid lining but its surface was very uneven. Several other pits and post holes lay directly to the north of (845), including three which were filled with fire cracked flint (696), (698) and (702). This group of features, which lies approximately 60 metres to the west of enclosure (694), may provide evidence of related activities.

4.10.9 Around the segment revealed of (824), spatial relationships were not so obvious as they had been in connection with (694). A north-west to south-east alignment was visible just west of the enclosure, including contexts (806), (844), (838) and (830) but nothing connected with usage or inhabitation of the enclosure appears on the plot in this area.

4.10.10 Many of the configurations of pits or post holes were perceived from the composite plot (see Fig. 3) of all recorded features produced by the Total Station. They were not tested by excavation in the field due to time constraints, therefore the detected patterns cannot be proved.

4.11 PHASE V

4.11.1 Phase V denotes a nineteenth and twentieth century period of activity when mole drains, not contexted, were laid in preparation for cultivation of the land.

4.12 PHASE VI

4.12.1 Phase VI constitutes topsoil which accumulated as a result of forestation and agricultural processes from the mid 19th to the 20th century. This layer seals the archaeology.

5. CONCLUSIONS

5.1 Throughout the Watching Brief emphasis was placed on recording and plotting all archaeological features using a Total Station. A predictive model was employed through necessity because of time and staffing constraints, the size of the area and the quantity of archaeology. This meant that approximately 50% of the archaeology was fully excavated and recorded and the rest was interpreted in the field, recorded pre-excavation and plotted with the Total Station. This methodology is limited in that, despite the extent and range of archaeology on this site, a relatively small pottery assemblage has been collected. As a result of this, dating has not always been possible and interpretation of features is inconclusive. The visibility of features was also problematic, since large areas were stripped by the Hymacs and inevitably left exposed sometimes for long periods before the team of field staff could investigate them. Because of this, increasingly dry and dusty conditions on site significantly altered the clarity of the archaeological evidence. Despite this, however, the Watching Brief did expose far more archaeological remains than was indicated by the aerial photographs. These were useful in that they accurately located the enclosures and field system ditches in the area, but they did not appear to reflect or predict the amount of associated post holes and pitting revealed by this phase of work, which covered the extent of the haul road and 1A and 1B.

5.2 Roman activity found across the area covered by the Watching Brief appeared to be of a later 3rd and 4th century date. It also seems to have been extensive, with pit groups and cremations on the haul road towards the south of the site and two enclosure ditches in the far north. The northern part of 1B had already been observed in the Evaluation but the Watching Brief enabled better definition of cropmarks and associated features. The enclosures in the north of the site may have been used as pens for stock, or could be part of a field system used for crops but the square enclosure (planned almost in its entirety) also showed evidence (not visible from the aerial photographs) of concentrated activity both internally and externally, to its west, south and east (see Fig. 4). To the west of this enclosure lay a large burnt flint spread with other pits showing evidence of burning around it. The flint appeared to have been collected deliberately and this may be the site of a large fire (see 4.10.8 for discussion). Although these enclosures and surrounding features do not necessarily suggest settlement more investigation would be necessary to prove their function. Many post holes were scattered across the whole of the site. There are three possible traces of circular accumulations which may indicate hut structures, seven possible alignments of pits/post holes, and one group of post holes forming a possible rectangular structure. Fire pits and areas of burning occur frequently across the site. These are all details which may indicate a sizeable human presence.

5.3 As indicated by the aerial photographs, the Watching Brief has shown that it may be that the most organised activity occurred in the north and south of the site. Excavations on the haul road, immediately north-east of Cell 6, revealed a group of five cremation burials, with several inter-cutting pit groups to the south. Most of these pits provided dating material from the later Roman period (post 2nd century AD), although one of the pits contained a number of sherds which dated to the middle Iron Age. This may indicate the presence of earlier activity in the vicinity. The cremations provided much dating evidence to locate them between the 2nd and the 4th centuries; whereas the cremations from Cell 6 were of an earlier date (1st to 2nd century AD) and cut the back-filled late Iron Age-early Roman enclosure ditch.

Excavations at Cell 6 did not provide conclusive evidence of Roman settlement, but strongly suggested that there was one somewhere nearby. It has been suggested that at Cell 6 the earlier settlement was abandoned and that the inhabitants of the area in the Roman period used the disused settlement for the disposal of their dead (Turner, 1994). The cremations from Cell 6 and those excavated during this Watching Brief may both be associated with the same settlement, potentially spanning four centuries, located somewhere at the southern end of this site. It is also possible that during the Roman period, the inhabitants of the area migrated northwards, giving the impression of sprawling activity across this part of Fairlop Plain. Alternatively, the 3rd-4th century cremations from the Watching Brief are actually associated with a later phase of Roman activity, located towards the north (part of which is evident in areas 1A, 2A and 2B) and are perhaps deliberately positioned at a distance from the centre of occupation.

5.4 The Watching Brief revealed evidence of prehistoric activity, as had the Evaluation of the northern field earlier in the year and the excavations at Cell 6. Fairlop Plain seems to have been occupied by various peoples from the Bronze Age to the end of the Roman period (5th century). Rather than presenting a comparison, the three sites provide contrasting evidence. Excavations at Cell 6 revealed a middle Iron Age settlement with a later early Roman presence; the Evaluation found signs of the Bronze Age, transitional Iron Age-early Roman and late Roman activity; and the Watching Brief opened an almost exclusively late Roman landscape with indications of an earlier possible middle Iron Age presence. Fragmentary evidence continues to come to light of activity of a pre-Roman nature in this area, but excavations have not yet revealed the centre of an accurately dated settlement, and since information is limited no conclusions can be drawn.

5.5 Subsoil did not cover the whole site, but where it did exist it overlay the gravel and provided the archaeological horizon. Of the three pre-Roman features found here, one was cut into gravel (571) on the haul road and was middle Iron Age in date; in 1A (483) cut the subsoil and was dated Neolithic-early Iron Age; and in 1B (435) also cut brickearth and was dated as prehistoric. There was no evidence to prove that archaeology cutting areas of gravel (where no subsoil was present) was earlier than archaeology found cutting the subsoil. In fact in 1B and on the haul road, where the most dating evidence was retrieved, dating pointed to the 3rd and 4th century AD. Nonetheless it is possible that the subsoil may have sealed an earlier phase of archaeology which could not be observed during this Watching Brief.

5.6 Although there is the possibility of structural evidence in the area, grouping and alignments were extrapolated from the composite plan in post-excavation. The sheer number of post holes and pits and the density of these on the ground meant that it was sometimes easy to associate closely situated features and create possible 'structural' patterns. These are suggestions only and although their presence shows intense activity, it may not necessarily prove habitation in this area.

5.7 Features of interest were found in the north and the south, with a large area of definite activity and possible inhabitation across the centre of the site. The level of truncation, both from above from ploughing and in the west for levelling of in preparation for the building of the airports, proved a problem with all features but particularly when trying to discern patterns among the large number of post holes.

5.8 Evidence collected from both Evaluation and Watching Brief suggests that the site was not occupied after the Roman period, and documentary evidence states that it was forested in

the medieval period. Ploughing has taken place across the site since the second half of the nineteenth century.

5.9 The environmental samples collected from this phase of work will be analysed at a later date and will be assessed with material collected from all phase. The environmental record will consider the site as a whole and further information will be available on the conclusion of the Watching Brief.

5.10 The next phase of gravel extraction should provide essential information in widening the archaeological picture. It would give a fuller understanding of land use and settlement to the north and south of the site; may give a clearer view of structural formations and boundary patterns within the more discrete features; would perhaps broaden our comprehension of burial formation and practice in this area, at this time; and would answer questions about the perceived range of prehistoric activity and movement on site.

6. APPENDICES

APPENDIX I

BIBLIOGRAPHY

- Chapman & Andre 1777 “A Map of the Country 65 Miles Around London.”
Plate XVI. 1777.
- English Heritage 1991 “Management of Archaeological Projects.”
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- English Heritage 1992 “Standards and Practices in Archaeological Fieldwork, (London
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- Ordnance Survey 1976 Romford, Drift. Geological Survey of Great Britain
(England and Wales), sheet 257.
- Turner, M. 1994 Fairlop Quarry; An Archaeological Investigation
Unpublished report, Newham Museum Service
- Turner, M. 1996 Specification for an Archaeological Excavation
at the proposed Fairlop Quarry Extension
Unpublished report, Newham Museum Service

The site records and archive are currently held at the Archaeology and Local History Centre,
31 Stock Street, Plaistow, London. E13 OBX.

APPENDIX II

Note on Environmental Record

Environmental analysis was not a priority in the specifications for this site and the Watching Brief did not produce any deeply stratified sequences or waterlogged deposits, therefore only a very limited sampling exercise was undertaken. Where features contained visible evidence of potential for environmental interest a soil sample was collected. All of the cremations were 100% sampled (Sample Nos. 1, 3, 4, 5, 7) including a separate 100% sample of the contents (fill 362- Sample No.6)of the vessel within cremation cut (361). Additional to this single features of types were sampled, particularly in this instance, where burning appeared to have occurred. These were a burnt post hole (Sample No. 8), the burnt fill of two pit types (Sample Nos. 2, 10), and the possible rake out represented by the large cracked flint deposit (845 - Sample No. 9). None of the ditches uncovered within this phase of excavation were sampled since they were all relatively shallow and dry, and the size of sample needed for effective analysis was untenable in terms of time and resources.

Appendix III

BULK FINDS RECORD

(recorded by count and weight, count /weight g)

Context BF	Flint	CBM	Daub	PRE	LIA/ER POT	R POT	R/MED POT	OTHER POT	
+ HR	-	-	-	-	-	-	-	-	burnt 2.9.96 bone? 1+/1g
+ 6.9.96 HR (first recorded as a pit fill)	-	-	-	-	3/21	2/9	-	-	-
300	2/11	1/1.5	7/517	2/60	1/7	-	-	-	(CBM 3/284 Roman, 4/233 Roman?)
302	-	-	-	-	-	-	5/50	-	-
303	-	-	-	-	-	-	2/56	1/6 = P-MED?	-
306	-	-	1/102	-	2/9?	-	8+/78	-	-
307	-	-	-	-	3/52	-	5/12	P-MED 1/14	-
311	-	-	-	-	-	-	-	-	indet 1+/13
315	1/1	-	-	3+/15	-	-	-	-	-
333	-	-	-	-	-	-	2/5	-	-
343	-	-	-	-	-	-	4/79	-	-
343 top (mole-drain)	-	2/58	1/5	-	-	-	-	charcoal	-
343 HR	-	-	-	-	-	1/40	-	-	-
343 1b	-	-	-	-	-	-	-	-	Roman coin
345/6	-	-	-	-	2/12	-	-	-	charcoal 1+/6
349	-	-	-	-	-	-	3/8	-	-
356	-	-	-	-	-	-	1/9	-	-
[sample 3]									
358	-	-	-	-	-	-	2+/99	-	-
360	-	-	-	-	-	-	67+/1037	-	-
363	-	-	-	-	-	-	1/2	-	-
395	-	-	4/282	-	-	4+/116?	1/16	-	-
400	-	-	1/42	-	-	-	2/40	-	-
434	-	-	-	-	-	-	2/1	-	-
454	-	-	-	-	-	-	2+/9	-	-
456	-	-	-	-	-	-	1/2	-	-
482	-	-	-	-	-	-	1/12	-	-
524	-	-	-	3/46	-	-	-	-	-
560	-	-	1/1	-	-	-	-	-	-
564	-	-	-	-	2/21	-	-	-	-
566	-	-	-	-	-	-	7/77	-	-
568	-	-	1/44	-	1/21	-	3/13	-	-
570	-	-	-	-	8+/26	-	6/21	-	-
577	-	1/2.5	2/37	-	-	-	27+/230	- jet armllet	1/2

IG-HR 96 BULK FINDS

Context BF	Flint	CBM	Daub	PRE	LIA/ER POT	R POT	R/MED POT	OTHER POT	
693	-	-	3/257	-	-	-	1/85	-	-

823	-	-	-	1/7	-	-	6/80	-	-
845	-	-	-	2+/167	-	-	-	-	-

TOTALS:

ALSO:

1 Roman coin

1 fragment of a jet armlet or bracelet

FAIRLOP QUARRY, ILFORD IG-HR 1996 WATCHING BRIEF

CERAMIC AND LITHIC ARCHIVE:
SPOT-DATING RECORD

Context	Fabric	Form	Date Range/Comments	Condition	Work	Illus	
+HR	CH	1	- MIA or ES	grass-temper	A	ID	N
+ HR	Q	2	- MIA, LIA OR?	A	ID	N	
+ HR	QG/ROM	2	- LIA-ER	A	ID	N	
300	F	1	I/III NEOL-EIA		A	ID	N
302	RED	2	G ROMAN		A	ID	N
302	RED	1	STO ROMAN, 2nd+?	A	ID	N	
302	RED	1	- ROMAN		A	ID	N
302	GRS	1	- ROMAN, 2nd+?	A	ID	N	
303	HADS	1	G? ROMAN, LATE 2nd+	A	ID	N	
303	RED	1	- ROMAN, very small		A	ID	N
303	RED	1	G ROMAN, 2nd+	A	Y	N	
306	QV	2	- MIA or ES		A	Y	N
306	GRS	3=1	G ROMAN		A	Y	N
306	GRS	1	G ROMAN, later Roman	A	Y	Y?	
306	GRS	4+	- ROMAN		A	Y	N
307	QV	3	- LATER PREHIST		A	ID	N
307	GRS-RED	3	- ROMAN		A	ID	N
307	QG/LGROG	2	- LATER ROMAN, 2ND+ (like IG-LH 92 (3) ?)	A	ID	N	
307	PMRU	1	JUG? 1600+?	-	Y	Y?	
+JOIN WITH (511) NEEDS A CAREFUL CHECK							
333	GRS	1	G ROMAN, 2nd+	A	ID	Y?	
333	GRS	1	- ROMAN		A	ID	N
343	RED	1	- ROMAN?		A	ID	N
343	OXWW?	1	D/M22? LR 240-400+	A	Y	Y?	
343	GRS	2	- ROMAN		A	ID	N
343 HR	LSTON	1	BOTTLE 1800+	-	ID	N	
343 1b	COIN	1	- LATE 3RD?	needs cleaning	AID	N	
345/346	F	2	I/III NEOL-BA		A	ID	N
349	HADS	1	- LATE ROMAN	A	ID	N	
349	GRS	1	- ROMAN		A	ID	N
349	GROG	1	- ROMAN, ?late?	A	ID	N	
356	GRS	1	G ROMAN, 2nd+	A	ID	N	
358	GRS	1+	G LATER ROMAN/sooted	-	ID	N	
358	GRS	1	- ROMAN		-	ID	N
360	GRS	67+ = 1	G ROMAN, late 1st-3rd		-	Y	Y
360	LBS	2	N LR later 3rd+/Mucking	N A	Y	y	
363	RED	1	- ROMAN/small	A	ID	N	
395	QV	1	- LIA or LATER ROMAN	-	ID	N	
395	GRS	-	- ROMAN		-	ID	N
400	OXRC?	1	C44? 270-350?		A	Y	Y
400	GRS	1	- ROMAN		A	Y	N
434	F	2	- PREHISTORIC	A	N	N	
454	GRS/GRF	2+ G?	ROMAN recently smashed	A	ID	N	
456	BUF	1	- ROMAN		A	Y/ID	N
482	F	1	I/III NEOL-EIA		A	Y/ID	N
560	CBM	1	- ROMAN?		A	ID	N
564	Q	1	- MIA		A	ID/Y	N
564	QV	1	- MIA or ??ES??	A	ID/Y	N	
566	HADS	1	- LR 300+		A	Y/ID	N
566	OXWW?	1	D6.1 LR 300-400+ (Going form)		A	Y/ID	Y
566	GRS	4	- ROMAN		A	ID	N

568	QV	1	F13?	MIA		A	Y	Y
568	GRS	3	-	ROMAN 2nd+	A	ID	N	
570	Q	5+	-	MIA - hand-made		A	ID	N
570	QV	3	-	MIA or ES		A	ID	N
570	BUF-RED	5	-	ROMAN		A	ID	N
570	GRS	1	-	ROMAN		A	ID	N
577	HADS	1	G	LR 300+		-	Y	Y
577	HADS/PMRU	1	J	LR or POST-MED		-	Y	Y
577	RED	2	-	ROMAN		-	Y	N
577	OXWW	1	D	LR (same vessel in 566?)	A	Y	Y	
577	GRS	13+	-	LATER ROMAN	-	Y	N	
577	GRS	4	G	LR		-	Y	Y
577	LBS/BB	1	B6	LR 260+		A	Y	Y
577	LBS	2	-	LR		A	Y	N
ALSO A FRAGMENT OF A JET OR SIMILAR ARMLET OR BRACELET								
577	FLINT	1		BLADE MESOLITHIC?	-	Y	Y?	
693	OXRC?	1	C97	LR 250-400+		A	Y	Y
823	RED	1	-	ROMAN		A	Y	N
823	GRS/BUF	1	G	ROMAN		A	Y	Y?
823	GRS	1	G21	ROMAN 2nd+	A	Y	N	
823	LBS/BB	1	G	LATER ROMAN	A	Y	N	
823	LBS/BB	1	STO?	LATER ROMAN	A	Y	N	
823	LSH	1	-	LR 300+		A	Y	N

APPENDIX IV

GLSMR/RCHME NMR ARCHAEOLOGICAL REPORT FORM

1. TYPE OF RECORDING.

Evaluation Excavation Watching brief 3

Other (please specify)

2. LOCATION.

Borough: LONDON BOROUGH OF REDBRIDGE

Site address: FAIRLOP QUARRY EXTENSION
 HAINAULT ROAD
 REDBRIDGE

Site name: FAIRLOP QUARRY EXTENSION Site code: IG-HR 96 (ii)

Nat. Grid Refs: **Centre of site:** 4630 9050

Limits of site: a) SW4623 9043 b) NW4590 9105

 c) SE4640 9045 d) NE4610 9115

3. ORGANISATION.

Name of archaeological unit/ ~~company~~/ ~~society~~:

Address: NEWHAM MUSEUM SERVICE
 31, STOCK STREET
 PLAISTOW
 LONDON
 E13 OBX

Site director/ supervisor: ALICE HODGINS

Project manager: MARK TURNER

Funded by: REDBRIDGE BOROUGH COUNCIL LAND MANAGEMENT DIVISION
AND REDLANDS AGGREGATES LTD

4. DURATION.

Date fieldwork started: 27.8.96

Date finished: 30.9.96

Field work previously notified?

YES/ ~~NO~~

Fieldwork will continue?

YES/ ~~NO/ NOT KNOWN~~

5. PERIODS REPRESENTED.

Palaeolithic

Roman 3

Mesolithic

Saxon (pre-AD 1066)

Neolithic

Medieval (AD 1066 -1485)

Bronze Age

Post-Medieval

Iron Age 3

Unknown

6. PERIOD SUMMARIES. Use headings for each period (Roman; Medieval; etc.), and continue on additional sheets as necessary.

IRON AGE

Evidence of pre-Roman activity was limited and widely dispersed across the site. It consisted of a pit, one of a small group; a post hole, possibly associated with two others forming a linear pattern on a north-west - south-east alignment; and an isolated pit, situated within an area of later Roman activity.

ROMAN

Roman activity found across the area appeared to be of a later 3rd and 4th century date. To the south were a group of five cremation burials and various intercutting pit groups and to the north, lay two enclosure ditches.

7. NATURAL. (state if not observed; please DO NOT LEAVE BLANK)

Type: NATURAL GRAVEL AND BRICKEARTH

Height above Ordnance Datum: HIGHEST: 29.499METRES A.O.D.
23.539METRES A.O.D.

8. LOCATION OF ARCHIVES.

a) Please indicate those categories still in your possession:

Notes	Plans	Photos	Negatives
Slides	Correspondence	Manuscripts (unpub. reports etc.)	

b) All/~~some~~ records have been/ ~~will be~~ deposited in the following museum/ ~~records office~~-
ete. :

NEWHAM MUSEUM SERVICE,
31, STOCK STREET,
PLAISTOW,
LONDON E13 OBX.

c) Approximate year of transfer: 1997

d) Location of any copies: AS ABOVE

e) Has a security copy of the archive been made? YES/ NO

If not, do you wish RCHME to consider microfilming? YES/ NO

9. LOCATION OF FINDS.

a) In your possession? ~~ALL/ SOME/~~ NONE

b) All/~~some~~ finds have been/ ~~will be~~ deposited with the following museum/~~other body~~:

NEWHAM MUSEUM SERVICE,
31, STOCK STREET,
PLAISTOW,
LONDON.
E13 OBX.

c) Approximate year of transfer: 1997

10. BIBLIOGRAPHY

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Unpublished report, Newham Museum Service
- Turner, M. 1996 Specification for an Archaeological Excavation
at the proposed Fairlop Quarry Extension
Unpublished report, Newham Museum Service

SIGNED:

DATE: 22.1.97

NAME (Block capitals): ALICE HODGINS

Please return completed form to The Greater London Sites and Monuments Record, English
Heritage London Region, 30 Warwick St., London W1R 5RD. Tel. 0171 973 3731/ 3779
(direct dial).

APPENDIX V - Index

IG-HR 96 (ii) INDEX

CONTEXT NO.	AREA	TYPE	PHASE NO.	SAMPLE NO.	PHOTOGRAPHS
300	ALL	SUBSOIL	II	-	-
301	HR	FILL	III	-	-
302	HR	CUT-PIT	III	-	B/W11:22-25 C/S11:22-25
303	HR	FILL	III	-	-
304	HR	CUT-PIT	III	-	B/W10:21-24 C/S10:21-24
305	HR	FILL	III	-	-
306	HR	CUT-PIT	III	-	B/W11:2-5 C/S11:2-5
307	HR	FILL	III	-	-
308	HR	CUT-PIT	III	-	B/W10:17-20 C/S10:17-20
309	HR	FILL	III	-	-
310	HR	CUT-B. PIT	III	-	B/W10:13-16 C/S10:13-16
311	1A	FILL	III	-	-
312	1A	CUT-PIT	III	-	B/W11:18-21 C/S11:18-21
313	HR	FILL	III	-	-
314	HR	CUT-PIT	III	-	B/W11:30-33 C/S11:30-33
315	HR	FILL	III	-	-
316	HR	CUT-PIT	III	-	B/W10:29-32 C/S10:29-32
317	1A	FILL	III	-	-
318	1A	CUT-PIT	III	-	B/W12:5-8 C/S12:5-8
319	HR	FILL	III	1	-
320	HR	CUT-CREM.	III	-	B/W10:1-4 C/S10:1-4 B/W13:20-27 C/S13:20-27
321	HR	FILL	III	-	-
322	HR	CUT-PH	III	-	B/W10:9-12 C/S10:9-12
323	HR	FILL	III	-	-
324	HR	CUT-PIT	III	-	B/W11:26-29 C/S11:26-29
325	HR	FILL	III	-	-
326	HR	CUT-PH	III	-	B/W10:5-8 C/S10:5-8
327	1A	FILL	III	-	-
328	1A	CUT-PH	III	-	B/W12:1-4 C/S12:1-4
329	HR	FILL	III	-	-
330	HR	CUT-PIT	III	-	B/W12:13-16 C/S12:13-16
331	1A	FILL	III	-	-
332	1A	CUT-PIT	III	-	B/W12:9-12 C/S12:9-12
333	HR	FILL	III	-	-
334	HR	CUT-PIT\NDIT	III	-	B/W11:6-9 C/S11:6-9
335	HR	FILL	V	-	-
336	HR	CUT-PH	V	-	-
337	HR	FILL	V	-	-
338	HR	CUT-PH	V	-	-
339	HR	FILL	V	-	-
340	HR	CUT-PH	V	-	-
341	HR	FILL	V	-	-
342	HR	CUT-PH	V	-	-
343	ALL	TOPSOIL	IV	-	-
344	ALL	NAT	I	-	-
345	HR	FILL	III	-	-
346	HR	CUT-BPH	III	-	B/W10:25-28 C/S10:25-28
347	HR	FILL	III	-	-
348	HR	CUT-PH	III	-	B/W11:10-13 C/S11:10-13
349	HR	FILL	III	-	-
350	HR	CUT-PH/PIT	III	-	B/W11:14-16 C/S11:14-16

351	1A	FILL	III	2	-
352	1A	FILL	III	-	-
353	HR	FILL	III	-	-
354	HR	FILL	III	-	-
355	HR	FILL	III	-	-
356	HR	FILL	III	3	-
357	HR	CUT-CREM	III	-	B/W12:21-24,36-37 C/S12:21-24,36-37 B/W13:20-27 C/S13:20-27
358	HR	FILL	III	4	-
359	HR	CUT-CREM	III	-	B/W12:17-24,36-37 C/S12:17-24,36-37 B/W13:20-27 C/S13:20-27
360	HR	FILL	III	5	-
361	HR	CUT-CREM	III	-	B/W12:25-35 C/S12:25-35 B/W13:20-27 C/S13:20-27
362	HR	FILL	III	6	-
363	HR	FILL	III	7	-
364	HR	CUT-CREM	III	-	B/W13:16-19 C/S13:16-19 B/W13:20-27 C/S13:20-27
369	1A	FILL	III	-	-
370	1A	CUT-PIT/PH	III	-	-
371	1A	FILL	III	-	-
372	1A	CUT-PIT	III	-	-
373	1A	FILL	III	-	-
374	1A	CUT-PIT/PH	III	-	-
375	1A	FILL	III	-	-
376	1A	CUT-PIT	III	-	-
377	1A	FILL	III	-	-
378	1A	CUT-PIT/PH	III	-	-
379	1A	FILL	III	-	-
380	1A	CUT-PIT/PH	III	-	B/W13:6-9 C/S13:6-9
381	1A	FILL	III	-	-
382	1A	CUT-PIT	III	-	-
383	1A	FILL	III	-	-
384	1A	CUT-PIT/PH	III	-	B/W13:10-13 C/S13:10-13
385	1A	FILL	I	-	-
386	1A	CUT-NAT	I	-	-
387	1A	FILL	III	-	-
388	1A	CUT-PIT/PH	III	-	-
389	1A	FILL	III	-	-
390	1A	CUT-PIT	III	-	-
391	1A	FILL	III	-	-
392	1A	CUT-PH	III	-	-
393	1A	FILL	I	-	-
394	1A	CUT-NAT	I	-	-
397	1A	FILL	III	-	-
398	1A	CUT-DITCH	III	-	-
400	HR	FILL	III	-	-
401	HR	CUT-PIT	III	-	-
402	1A	FILL	III	-	-
403	1A	CUT-PH	III	-	-
410	1A	FILL	III	-	-
411	1A	CUT-BPH	III	-	-
414	1A	FILL	III	-	-
415	1A	CUT-BPH	III	-	-
416	1A	FILL	III	-	-
417	1A	CUT-BPH	III	-	-
418	1A	FILL	III	-	-

419	1A	CUT-BPH	III	-	-
420	1A	FILL	III	-	-
421	1A	CUT-PIT	V	-	B/W14:6-7 C/S14:6-7
422	1A	FILL	III	-	-
423	1A	CUT-FL.F.PIT	III	-	B/W15:35-37 B/W15:35-37 B/W16:2-3 C/S16:2-3
424	1A	FILL	III	-	-
425	1A	CUT-BPH	III	-	-
426	1A	FILL	III	-	-
427	1A	CUT-BPH	III	-	-
428	1A	FILL	III	-	-
429	1A	CUT-BPH	III	-	-
430	1B	FILL	III	-	-
431	1B	CUT-BPH	III	-	B/W13:28-31 C/S13:28-31
432	1B	FILL	III	8	-
433	1B	CUT-BPH	III	-	B/W13:36-37 C/S13:36-38
434	1B	FILL	III	-	-
435	1B	CUT-PH	III	-	-
436	1A	FILL	III	-	-
437	1A	CUT-DITCH	III	-	-
438	1B	FILL	III	-	-
439	1B	CUT-PH	III	-	B/W13:32-35 C/S13:32-35
440	1A	FILL	III	-	-
441	1A	CUT-PH	III	-	-
442	1A	FILL	III	-	-
443	1A	CUT-PH	III	-	-
444	1B	FILL	III	-	-
445	1B	CUT-PH	III	-	-
446	1B	FILL	III	-	-
447	1B	CUT-GULLY	III	-	B/W14:1-4 C/S14:1-4
448	1A	FILL	III	-	-
449	1A	CUT-PH	III	-	B/W14:8-11 C/S14:8-11
450	1A	FILL	III	-	-
451	1A	CUT-BPH	III	-	-
452	1A	FILL	III	-	-
453	1A	CUT-BPH	III	-	B/W14:16-19,32-35 C/S14:16-19,232-35
454	1A	FILL	III	-	-
455	1A	CUT-BPH	III	-	B/W14:20-23,32-35 C/S14:20-23,32-35
456	1A	FILL	III	-	-
457	1A	CUT-BPH	III	-	B/W14:12-15,32-35 C/S14:12-15,32-35
458	1A	FILL	III	-	-
459	1A	CUT-BPH	III	-	B/W14:24-27,32-35 C/S14:24-27,32-35
460	1A	FILL	III	-	-
461	1A	CUT-BPH	III	-	B/W14:28-35 C/S14:28-35
462	1A	FILL	III	-	-
463	1A	CUT-PIT	III	-	-
464	1A	FILL	III	-	-
465	1A	CUT-PH	III	-	-
466	1A	FILL	III	-	-
467	1A	CUT-PH	III	-	-
468	1A	FILL	III	-	-
469	1A	CUT-PH	III	-	-
470	1A	FILL	III	-	-
471	1A	CUT-PH	III	-	-
472	1A	FILL	III	-	-

473	1A	CUT-PIT	III	-	-
474	1A	FILL	III	-	-
475	1A	CUT-PH	III	-	-
476	1A	FILL	III	-	-
477	1A	CUT-PIT	III	-	-
478	1A	FILL	III	-	-
479	1A	CUT-PH	III	-	-
480	1A	FILL	III	-	-
481	1A	CUT-PIT	III	-	B/W15:10-13 C/S15:10-13
482	1A	FILL	III	-	-
483	1A	CUT-PIT/PH	III	-	B/W15:10-13 C/S15:10-13
484	1A	FILL	III	-	-
485	1A	CUT-PIT	III	-	B/W15:10-13 C/S15:10-13
486	1A	FILL	III	-	-
487	1A	CUT-PH	III	-	-
488	1A	FILL	III	-	-
489	1A	CUT-PH	III	-	-
490	1A	FILL	III	-	-
491	1A	FILL	III	-	-
492	1A	CUT-PIT	III	-	B/W15:2-5 C/S15:2-5
493	1A	FILL	III	-	-
494	1A	CUT-PIT	III	-	-
495	1A	FILL	III	-	-
496	1A	CUT-BPH	III	-	B/W15:14-17 C/S15:14-17
497	1B	FILL	III	-	-
498	1B	CUT-PH	III	-	B/W15:6-9 C/S15:6-9
499	1A	FILL	III	-	-
500	1A	CUT-PIT	III	-	B/W15:18-21 C/S15:18-21
501	1A	FILL	III	-	-
502	1A	CUT-PIT/PH	III	-	-
503	1A	FILL	III	-	-
504	1A	CUT-B.ST.H	III	-	B/W15:22-26 C/S15:22-26
505	1A	FILL	III	-	-
506	1A	CUT-B.ST.H	III	-	B/W15:22-26 C/S15:22-26
507	1A	FILL	III	-	-
508	1A	CUT-B.ST.H	III	-	B/W15:22-26 C/S15:22-26
509	1A	FILL	III	-	-
510	1A	CUT-B.ST.H	III	-	B/W15:22-26 C/S15:22-26
511	1A	FILL	III	-	-
512	1A	CUT-BPH	III	-	B/W15:22-26 C/S15:22-26
513(524)	1A	FILL	III	-	-
514	1A	FILL	III	-	-
515	1A	CUT-PH	III	-	B/W15:27-30 C/S15:27-30
516	1A	FILL	III	-	-
517	1A	CUT-PH	III	-	B/W15:31-34 C/S15:31-34
518	1A	FILL	III	-	-
519	1A	CUT-B.ST.H	III	-	B/W15:31-34 C/S15:31-34
520	1A	FILL	III	-	-
521	1A	CUT-PIT	III	-	B/W16:10-13 C/S16:10-13
522	1A	FILL	III	-	-
523	1A	CUT-BPH	III	-	B/W15:2-3 C/S15:2-3
524(513)	1A	FILL	III	-	-
525	1A	CUT-PIT	III	-	B/W16:4-9 C/S16:4-9
526	1A	FILL	I	-	-
527	1A	CUT-NAT	I	-	-
528	1A	FILL	III	-	-
529	1A	CUT-PH	III	-	-
530	1A	FILL	III	-	-
531	1A	CUT-PH	III	-	-

532	1A	FILL	III	-	-
533	1A	CUT-PH	III	-	-
534	1A	FILL	III	-	-
535	1A	CUT-BPH	III	-	B/W16:14-17 C/S16:14-17
536	1A	FILL	III	-	-
537	1A	CUT-B.ST.H	III	-	B/W16:18-21 C/S16:18-21
538	1A	FILL	III	-	-
539	1A	CUT-PH/ST.H	III	-	-
540	1A	FILL	III	-	-
541	1A	CUT-PH/ST.H	III	-	-
542	1A	FILL	III	-	-
543	1A	CUT-PH	III	-	-
544	1A	FILL	III	-	-
545	1A	CUT-ST.H	III	-	-
546	1A	FILL	III	-	-
547	1A	CUT-ST.H	III	-	-
548	1A	FILL	III	-	-
549	1A	CUT-PH/ST.H	III	-	-
550	1A	FILL	III	-	-
551	1A	CUT-PH/ST.H	III	-	-
552	1A	FILL	III	-	-
553	1A	CUT-PH	III	-	-
554	1A	FILL	III	-	-
555	1A	CUT-PH/PIT	III	-	-
556	1A	FILL	III	-	-
557	HR	LAY-POND	III	-	-
560	1A	FILL	III	-	-
561	1A	CUT-PH/PIT	III	-	-
562	1A	FILL	III	-	-
563	1A	CUT-PH	III	-	-
564	1A	FILL	III	-	-
565	1A	CUT-PH	III	-	-
566	HR	FILL	III	-	-
567	HR	CUT-PIT/DIT	III	-	-
568	HR	FILL	III	-	-
569	HR	CUT-PIT	III	-	B/W16:22-25 C/S16:22-25
570	HR	FILL	III	-	-
571	HR	CUT-PIT	III	-	B/W16:22-25 C/S16:22-25
572	HR	FILL	III	-	-
573	HR	CUT-PH	III	-	-
574	HR	SPREAD	III	-	-
575	HR	FILL	III	-	-
576	HR	CUT-PH	III	-	-
577	HR	FILL	III	-	-
578	HR	CUT-PIT	III	-	-
579	1A?	FILL	III	-	-
580	1A	CUT-PH	III	-	-
581	1A	FILL	III	-	-
582	1A	CUT-PH	III	-	-
583	1A	FILL	III	-	-
584	1A	CUT-ST.H	III	-	-
585	1A	FILL	III	-	-
586	1A	CUT-PH	III	-	-
587	1A	FILL	III	-	-
588	1A	CUT-PH	III	-	-
589	1A	FILL	III	-	-
590	1A	CUT-PH	III	-	-
591	1A	FILL	III	-	-
592	1A	CUT-PIT/GUL	III	-	-

593	1A	FILL	III	-	-
594	1A	CUT-PH	III	-	-
595	1A	FILL	III	-	-
596	1A	CUT-ST.H	III	-	-
597	1A	FILL	III	-	-
598	1A	CUT-ST.H	III	-	-
599	1A	FILL	III	-	-
600	1A	CUT-PH	III	-	-
601	1A	FILL	III	-	-
602	1A	CUT-PH	III	-	-
603	1A	FILL	III	-	-
604	1A	CUT-PH/ST.H	III	-	-
605	1A	FILL	III	-	-
606	1A	CUT-PH	III	-	-
607	1A	FILL	III	-	-
608	1A	CUT-PH/ST.H	III	-	-
609	1A	FILL	III	-	-
610	1A	CUT-PH	III	-	-
611	1A	FILL	III	-	-
612	1A	CUT-PH	III	-	-
613	1A	FILL	III	-	-
614	1A	CUT-PH	III	-	-
615	1A	FILL	III	-	-
616	1A	CUT-PIT/PH	III	-	-
617	1A	FILL	III	-	-
618	1A	CUT-PH	III	-	-
619	1A	FILL	III	-	-
620	1A	CUT-PIT	III	-	-
621	1A	FILL	III	-	-
622	1A	CUT-PH	III	-	-
623	1A	FILL	III	-	-
624	1A	CUT-PIT	III	-	-
625	1A	FILL	III	-	-
626	1A	CUT-PH	III	-	-
627	1A	FILL	III	-	-
628	1A	CUT-PH	III	-	-
629	1A	FILL	III	-	-
630	1A	CUT-PH	III	-	-
631	1A	FILL	III	-	-
632	1A	CUT-PIT	III	-	-
633	1A	FILL	III	-	-
634	1A	CUT-PH/PIT	III	-	-
635	1A	FILL	III	-	-
636	1A	CUT-ST.H/PH	III	-	-
637	1A	FILL	III	-	-
638	1A	CUT-PIT/PH	III	-	-
639	1A	FILL	III	-	-
640	1A	CUT-PH	III	-	-
641	1A	FILL	III	-	-
642	1A	CUT-ST.H/PH	III	-	-
643	1A	FILL	III	-	-
644	1A	CUT-PH	III	-	-
645	1A	FILL	III	-	-
646	1A	CUT-PH	III	-	-
647	1A	FILL	III	-	-
648	1A	CUT-BPH	III	-	-
649	1A	FILL	III	-	-
650	1A	CUT-PH	III	-	-
651	1A	FILL	III	-	-

652	1A	CUT-PH	III	-	-
653	1A	FILL	III	-	-
654	1A	CUT-ST.H	III	-	-
655	1A	FILL	III	-	-
656	1A	CUT-PH	III	-	-
657	1A	FILL	III	-	-
658	1A	CUT-PH	III	-	-
659	1A	FILL	III	-	-
660	1A	CUT-PH	III	-	-
661	1A	FILL	III	-	-
662	1A	CUT-PIT	III	-	-
663	1A	FILL	III	-	-
664	1A	CUT-FL.F.PIT	III	-	-
665	1A	FILL	III	-	-
666	1A	CUT-FL.F.PIT	III	-	-
667	1A	FILL	III	-	-
668	1A	CUT-PH	III	-	-
669	1A	FILL	III	-	-
670	1A	CUT-PH	III	-	-
671	1A	FILL	III	-	-
672	1A	CUT-PH	III	-	-
673	1A	FILL	III	-	-
674	1A	CUT-GULLY	III	-	-
675	1A	FILL	III	-	-
676	1A	CUT-PH	III	-	-
677	1A	FILL	III	-	-
678	1A	CUT-ST.H	III	-	-
679	1A	FILL	III	-	-
680	1A	CUT-PH	III	-	-
681	1A	FILL	III	-	-
682	1A	CUT-PH	III	-	-
683	1A	FILL	III	-	-
684	1A	CUT-PH	III	-	-
685	1A	FILL	III	-	-
686	1A	CUT-PH	III	-	-
687	1A	FILL	III	-	-
688	1A	CUT-BPH	III	-	-
689	1A	FILL	III	-	-
690	1A	CUT-PH	III	-	-
691	1B	FILL	III	-	-
692	1B	CUT-BPH	III	-	-
693	1B	FILL	III	-	-
694	1B	CUT-ENC.DIT	III	-	B/W17:26-29 C/S17:26-29
695	1B	FILL	III	-	-
696	1B	CUT-FL.F.PIT	III	-	-
697	1B	FILL	III	-	-
698	1B	CUT-FL.F.PIT	III	-	-
699	1B	FILL	III	-	-
700	1B	CUT-PIT/PH	III	-	-
701	1B	FILL	III	-	-
702	1B	CUT-FL.F.PIT	III	-	-
703	1B	FILL	III	-	-
704	1B	CUT-PH	III	-	-
705	1B	FILL	III	-	-
706	1B	CUT-PIT	III	-	-
707	1B	FILL	III	-	-
708	1B	CUT-PH	III	-	-
709	1B	FILL	III	-	-
710	1B	CUT-PIT	III	-	-

711	1B	FILL	III	-	-
712	1B	CUT-PIT/PH	III	-	-
713	1B	FILL	III	10	-
714	1B	CUT-PIT	III	-	B/W16:26-29 C/S16:26-29 B/W17:6-9,22-25 C/S17:6-9,22-25
715	1B	FILL	III	-	-
716	1B	CUT-FL.F.PIT	III	-	-
717	1B	FILL	III	-	-
718	1B	CUT-PIT	III	-	-
719	1B	FILL	III	-	-
720	1B	CUT-PH/DIT	III	-	-
721	1B	FILL	I	-	-
722	1B	CUT-NAT	I	-	-
723	1B	FILL	III	-	-
724	1B	CUT-PH	III	-	-
726	1B	FILL	I	-	-
728	1B	CUT-NAT	I	-	-
729	1B	FILL	III	-	-
730	1B	CUT-PH	III	-	-
731	1B	FILL	III	-	-
732	1B	CUT-PIT	III	-	-
733	1B	FILL	I	-	-
734	1B	CUT-NAT	I	-	-
735	1B	FILL	III	-	-
736	1B	CUT-PIT	III	-	-
737	1B	FILL	III	-	-
738	1B	CUT-PH	III	-	-
739	1B	FILL	I	-	-
740	1B	CUT-NAT	I	-	-
741	1B	FILL	III	-	-
742	1B	CUT-PIT	III	-	-
743	1B	FILL	III	-	-
744	1B	CUT-PH	III	-	-
745	1B	FILL	III	-	-
746	1B	CUT-FL.F.PIT	III	-	-
747	1B	FILL	III	-	-
748	1B	CUT-PH	III	-	-
749	1B	FILL	III	-	-
750	1B	CUT-PH	III	-	-
751	1B	FILL	III	-	-
752	1B	CUT-DITCH	III	-	-
753	1B	FILL	III	-	-
754	1B	CUT-PIT/PH	III	-	-
755	1B	FILL	III	-	-
756	1B	CUT-PIT	III	-	-
757	1B	FILL	III	-	-
758	1B	CUT-PIT	III	-	-
759	1B	FILL	III	-	-
760	1B	CUT-PIT	III	-	-
761	1B	FILL	III	-	-
762	1B	CUT-DITCH	III	-	-
763	1B	FILL	III	-	-
764	1B	CUT-DITCH	III	-	-
765	1B	FILL	III	-	-
766	1B	CUT-PIT	III	-	-
767	1B	FILL	III	-	-
768	1B	CUT-PIT/PH	III	-	-
769	1B	FILL	III	-	-
770	1B	CUT-PIT/PH	III	-	-

771	1B	FILL	III	-	-
772	1B	CUT-PH	III	-	-
773	1B	FILL	III	-	-
774	1B	CUT-PIT	III	-	-
775	1B	FILL	III	-	-
776	1B	CUT-PIT	III	-	-
777	1B	FILL	III	-	-
778	1B	CUT-PIT	III	-	-
779	1B	FILL	III	-	-
780	1B	CUT-PIT	III	-	-
781	1B	FILL	III	-	-
782	1B	CUT-PH	III	-	-
783	1B	FILL	III	-	-
784	1B	CUT-PIT	III	-	-
785	1B	FILL	III	-	-
786	1B	CUT-PH	III	-	-
787	1B	FILL	III	-	-
788	1B	CUT-PH	III	-	-
789	1B	FILL	III	-	-
790	1B	CUT-PH	III	-	-
791	1B	FILL	III	-	-
792	1B	CUT-PIT	III	-	-
793	1B	FILL	III	-	-
794	1B	CUT-PH	III	-	-
795	1B	FILL	III	-	-
796	1B	CUT-PH	III	-	-
797	1B	FILL	III	-	-
798	1B	CUT-PH	III	-	-
799	1B	FILL	III	-	-
800	1B	CUT-PIT/PH	III	-	-
801	1B	FILL	III	-	-
802	1B	CUT-PH	III	-	-
803	1B	FILL	III	-	-
804	1B	CUT-PH	III	-	-
805	1B	FILL	III	-	-
806	1B	CUT-PIT/PH	III	-	-
807	1B	FILL	III	-	-
808	1B	CUT-PIT	III	-	-
809	1B	FILL	III	-	-
810	1B	CUT-PH	III	-	-
811	1B	FILL	III	-	-
812	1B	CUT-PH	III	-	-
813	1B	FILL	III	-	-
814	1B	CUT-PH/PIT	III	-	-
815	1B	FILL	III	-	-
816	1B	CUT-PIT/PH	III	-	-
817	1B	FILL	III	-	-
818	1B	CUT-PIT/PH	III	-	-
819	1B	FILL	III	-	-
820	1B	CUT-PH	III	-	-
821	1B	FILL	III	-	-
822	1B	CUT-PH	III	-	-
823	1B	FILL	III	-	-
824	1B	CUT-ENC.DIT	III	-	B/W17:30-33 C/S17:30-33
825	1B	FILL	III	-	-
826	1B	CUT-DITCH	III	-	-
827	1B	FILL	III	-	-
828	1B	CUT-PH	III	-	-
829	1B	FILL	III	-	-

830	1B	CUT-PIT/PH	III	-	-
831	1B	FILL	III	-	-
832	1B	CUT-PIT	III	-	-
833	1B	FILL	III	-	-
834	1B	CUT-GULLY	III	-	-
835	1B	FILL	III	-	-
836	1B	CUT-PH	III	-	-
837	1B	FILL	III	-	-
838	1B	CUT-PH	III	-	-
839	1B	FILL	III	-	-
840	1B	CUT-PH	III	-	-
841	1B	FILL	III	-	-
842	1B	CUT-PH	III	-	-
843	1B	FILL	III	-	-
844	1B	CUT-PH	III	-	-
845	1B	B.F.SPREAD	III	9	B/W17:2-5,10-21 C/S17:2-5,10-21
846	1B	FILL	III	-	-
847	1B	CUT-PIT	III	-	-