Archaeological Assessment of the Proposed Rillington to Malton Pumping Main

M R Stephens
MAP Ltd Malton

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Fig 21 – Map showing Proposed Route of Pumping Main with suggested diversions

Introduction

MAP Ltd were approached by Yorkshire Water Engmeenng to provide an assessment of the impact on archaeological remains by constmction work associated with a proposed Pumping Main mnning from Rillmgton to Malton, North Yorkshire

The assessment takes the form of a review of the geology/soils and known archaeological activity, on the southern side of the Vale of Pickering A catalogue of known sites is provided, and suggestions are made for re-routing where possible

The assessment was carried out by the writer, with additional research being undertaken by M Johnson and P Ware Thanks are also due to P Horne (NAR, York), C Stoertz (NAR, Swindon), and N Campling and M Lakm (Archaeology Section, NYCC)

Topography, Geology and Soils

The route of the proposed Pumping Main lies at the southern edge of the Vale of Pickering (Fig 1) The route runs from a point on the west bank of the River Derwent (SE 778 706), eastwards along the southern fringes of Norton, then curves north-eastwards through Settrington and Scagglethorpe civil parishes to terminate at the Yorkshire Water installation to the west of Rillington (SE 847 747)

The Heslerton Parish project identified six geomorphological zones for the southern side of the Vale of Pickering (Powlesland *et al* 1986, 58) The course of the proposed Pumping Mam passes through Zones 4 and 5 Zone 4 covers extensive aeolian sand deposits at the foot of the chalk Wold escarpment and is bounded to the north by Zone 5, an area of postglacial sands and gravels

The geological drift underlying the proposed Pumping Main route consists for the most part of glaciofluvial sands and gravels (OS 1960), more specifically these have been termed the 'Sherburn Sands' Sherburn Sands are defined as mixed fine and quartzose sands with large lenses of chalk and flint gravels, with thin seams of fine coal and shale fragments (Foster 1987) Both the gravel and sand elements can be disturbed by ice-wedge pseudomorphs (*ibid* 34), which can create cropmarks in the same manner as archaeological features

The other category of the underlying geology is River Alluvium which is present adjacent to the River Derwent at the south-west end of the route (SE 778 706) and in the vicinity of Mill Beck, Sutton (SE 795 703)

The soils associated with the glaciofluvial sands and gravels are divided into two units (Fig 1)
(a) the Landbeach Association, permeable calcareous fine loamy soils affected by groundwater over chalky gravel, with some deep, m part non-calcareous fine and coarse loamy soils affected by ground water Cropping includes cereals, sugar beet and potatoes (SSEW, 229-31) This Association underlies the pipeline route from the Rillington end to a point at Sutton (SE 796 703)
(b) the Ellerbeck Association, very stony, well-drained loamy soils, locally on hummocky ground with some similar, but less stony soils Crops are usually cereals, sugar beet and potatoes (*ibid*, 179-80) Ellerbeck Association soils are present from a point west of Sutton (SE 795 703) to the flood plain of the Derwent (SE 778 706)

The Soil Association for the River Alluvium is Fladbury 3 (Fig 1), stoneless clayey, fine silty and fine loamy soils affected by groundwater, with a land use of pasture, and cereals on better drained ground (*ibid*, 194-6), in terms of the route, the latter occurs around Mill Beck, Sutton (SE 795 703), the former adjacent to the Derwent (SE 778 706)

These different geological deposits and soils have their individual implications for the assessment of the archaeological remains on the Pumping Main route

By and large the relatively well-drained soils of the Sherburn Sands are conducive to the formation of cropmarks (given suitable climatic conditions), with the caveat that aeolian sand deposits, where present, can obscure the archaeological deposits

The upper part of the Sherburn Sands have been reworked by wind action to create considerable deposits of aeolian or windblown sand in some areas Much of this wind action has occurred and continued since the Late Neolithic, so that archaeological deposits of all periods can be masked by aeolian sand (Powlesland 1988, 101) The implications for this assessment are that the aeolian sand may obscure archaeological sites and inhibit the formation of cropmarks, and may also provide only a coarse indication of a complex site by blurring or masking detail Indeed, for 'blank' areas along the southem margm of the Vale of Pickering it could be argued that there is great archaeological potential, for the aeolian sand has the affect of preserving remains that later agricultural processes have damaged

The exact location of aeolian sand deposits cannot be precisely predicted In Heslerton parish the aeolian deposits are confined to a band, c400-700m wide, mnning east to west, parallel to the Wold escarpment (Powlesland *et al* 1986, fig 3) It is therefore probable that occurrence of the aeolian deposits is more likely at the foot of the Wold escarpment In terms of the Assessment area, the areas most likely to be affected by aeolian sand lie in Rillmgton and Scagglethorpe parishes at the eastern end of the Proposed Pumping Main route Deposition of aeolian sand is generally associated with soils of the Newport 1 Association, which extends eastwards from Rillmgton at the foot of the Wold escarpment (SSEW, 249) The detail of the aerial photographs of the cropmark site SMR 3417, directly south of Norton, suggest that windblown sand is absent from that location at least

A possible way to predict the presence of aeolian sand is to examine the hedge banks in a given area, the presence of broad sandy lynchets is an accurate indicator of wind-deposited sand From rapid field appraisal it can be stated that such formations are absent from the hedge-banks along the Pumping Main route However, it is unclear whether wind-deposition in such cases is related exclusively to modern, or post-enclosure cultivation, given that wind-action has deposited sand since the late Neolithic, the absence of the above indicator does not necessarily rule out the wind-deposition of sand in earlier times

In any event, illustration of the masking effects of aeolian sand is provided by an excavation at Potter Brompton, where neither aerial reconnaissance nor geophysical survey revealed indications of a square-ditch barrow cemetery (Johnson forthcoming) At Slingsby, a 0 5m deep deposit of aeolian sand at the foot of the limestone escarpment, obscured Middle Anglian activity (Stephens 1991)

The River Alluvium is not greatly conducive to the creation of cropmarks due to the clay component, and so it is not possible to assess the archaeological potential of the alluvium by reference to aerial photographic reconnaissance Flint implements and flakes have been recovered from the alluvium in the Malton area (Robinson No 198), which imply some kind of prehistoric occupation or activity at the margins of the Derwent

In addition, different crops have different potentials for cropmark formation The fleshy leaves of root crops do not ripen in the same way as cereals Differences between areas of ripe cereal crop and the slightly less developed areas of crop present where the deeper, moister soils associated with archaeological features (eg pits and ditches), are difficult to perceive in root crops Indeed, the difference in crop ripeness/type from one field to another can be observed by the 'mosaic' affect of the cropmarks at SE 804 708, where a complex of linear cropmarks ends directly at the boundary of a field, and at SE 818 721 where the cropmark of a double-ditched trackway also terminates at the edge of a field

Previous Work

The area through which the proposed Pumping Main passes has been the subject of a considerable amount of aerial photographic reconnaissance, particularly since impetus was given to aerial survey by the dry summers in the middle of the 1970s P V Addyman, A L Pacitto, D Powlesland and D Riley have all made significant contributions to the recognition of cropmark sites in the area

No large-scale fieldwalking programme has taken place in the vicinity of the proposed Pumping Main, with the exception of fieldwork along the course of the Malton by-pass (Dunn 1976) The by-pass fieldwalking did not recover any field evidence in the vicinity of the proposed Pumping Main where the two schemes intersect at SE 833 723

In addition, no recorded excavations are known from the route of the proposed Pumping Main A considerable number of small-scale excavations were carried out by R H Hayes on Romano-British sites in Norton, particularly during the expansion of the town in the 1940/50s (Hayes and Whitley 1950, Hayes 1987) In 1989/90 similar work, of smaller scope was carried out by the East Ridmg Archaeological Research Committee The Roman fort at Malton and the *vicus* formed the focus for a number of excavations this century (Corder 1930, Mitchelson 1964) Further east along the southern edge of the Vale of Pickering massive large-scale excavations have been carried out by the Landscape Research Tmst on multi-period sites at West Heslerton and Sherburn Trial excavations were conducted on an Iron Age site at Rillington (Tumbull 1983)

Archaeological Background

The earliest known human activity in the Vale of Pickering is represented by a series of Mesolithic sites on the shores of a former post-glacial lake in the Seamer area, towards the eastern end of the Vale These sites were the subject of a series of excavations in 1950 (Clark 1954) and the 1970/80s (Schadla-Hall 1987) These well-preserved Mesolithic remains are confined to an area of Fen peat, a deposit not anticipated along the route of the proposed Pumping Main The apparent absence of traces of Mesolithic activity in the central southern part of the Vale could be due to the lack of specific fieldwork in the area, for the recovery of Mesolithic artifacts at West Heslerton (Powlesland *et al* 1986) indicates that such activity occurred at least as far west as this point Further, as the post-glacial lake is known to have extended at least as far west as Malton, traces of Mesolithic activity could be anticipated in the general vicinity

Evidence for the Neolithic and Bronze Ages along the southern side of the Vale of Pickering was provided by the Heslerton excavations (*ibid*), where pits, ditches and burials of the Neolithic were identified Three Bronze Age round barrows were excavated at West Heslerton, these were masked by aeolian sand Cropmarks of ring-ditches at Rillington could be Bronze Age (Turnbull 1983) as could an example on the north bank of the Derwent at Malton (Robinson, No 14) Bronze Age finds from the area include a rivetted bronze dagger from the vicinity of Rillington (SMR 3338), two palstaves from the Malton area (SMR 3507) and a greenstone axe from the Aucuba Farm area (SMR 3396,SE 8834 7357)

Late Bronze Age/Early Iron Age activity in the area is represented by a number of sites Two palisaded enclosures were excavated by T C M Brewster, Staple Howe in Knapton parish (Brewster 1963) and Devil's Hill, Heslerton (Stephens 1986) The West Heslerton excavations revealed an open settlement with round houses of this period, and a later Iron Age complex m the same area The Rillington excavations also showed enclosures of the later Iron Age (Turnbull 1983)

Square-ditch barrow cemeteries of the Arras Culture associated with the Parisi tribe are a feature of the later Iron Age m eastern Yorkshire A series of cropmarks in the vicinity of Turnbull's Rillington site represents such a square-ditch barrow cemetery Another square-ditch barrow cemetery has been examined at Potter Brompton, revealing, in whole or m part, nine barrows (Johnson, forthcoming)

The Iron Age saw the area subject to widespread agricultural exploitation, and it is to this period that the bulk of the cropmark sites in the area apparently belong Field systems, major dikes or land boundaries, trackways, settlements and single and clustered square-ditch barrows are all represented along the course of the proposed Pumping Main The settlements can take the form of 'ladder settlements', groups of enclosures strung out along the line of trackways in linear fashion The Landscape Research Trust excavated a complex area of such a settlement at Sherburn Further examples are known to extend westwards to the Rillington (SMR 3449 04), Scagglethorpe (SMR 3402) and Settrington (SMR 3407 100-400) areas, these sites could be part of the same element of the Iron Age/Romano-British landscape

The Roman site that has attracted the most attention along the southern margin of the Vale of Pickering is the Fort at Malton, with the associated civilian settlement, which extends into an industrial complex and settlement at Norton The proposed route of the Pumping Mam passes within c250m of the (presently) known southern limit of Roman activity at Norton, this is represented by two cemeteries, at the Ridings (Robinson, no 355), and 98 Langton Road (*ibid*, no 354) In the vicinity of these two cemeteries a possible Roman road (*ibid*, no 237) heads southwards to the Sutton Grange area and Scott's Hill The assumed line of this road will be cut by the Pumping Main route, as will a further example on Settrington Moor (SMR 1862 37 007) A section of the latter was excavated in 1955 at SE 802 713 (Hayes 1988, 81) Some form of Romano-British occupation in the vicinity of Scagglethorpe village is shown by the presence of a coin of Domitian (SMR 3394 01) and Romano-British sherds (SMR 3394 02)

The ubiquitous West Heslerton excavations also uncovered an Anglian cemetery and an Anglo-Saxon village, which covered 15ha (Powlesland 1990) Further settlement evidence of the middle Anglian period was recovered during a watching brief at Slingsby (Stephens 1991) Cemeteries or burials of the Anglian period have also been recorded at Rillington (Turnbull 1983), Staxton (Sheppard 1938) and Windlebeck Farm, Ganton (Brewster site, archive at MAP offices Malton) A cremation cemetery was found at Broughton (Meaney 1964)

Archaeological evidence for the Anglo-Scandinavian (or 'Viking') periods is largely absent from the area The place-name Scagglethorpe, compounded of the Old Scandinavian personal name *Skakul* and Old Scandinavian *thorp* or 'village' (Smith 1937, 139) points to Anglo-Scandinavian settlement

The course of the proposed Pumping Main passes close to a number of sites of the medieval period the villages and Open Fields of Sutton, Scagglethorpe and Rillington All three of these villages are mentioned in the Domesday Book (Morris, ed 1986), which almost certainly proves a pre-conquest date for their foundation

Sutton was a Grange of Old Malton Priory, the site of the Grange being apparently obscured by the 19th century 'Sutton Grange' House (Platt 1969, 236) The medieval village of Sutton is believed to have adjomed Langton Road, c100m north of the proposed Pumping Main route

To the east of Sutton, the route passes through the site of part of the Open Fields of Sutton, them c 200m west of Scagglethorpe village, endmg immediately west of another Grange of Old Malton Priory at Rillington (*ibid*, 227)

Since medieval times and into the Enclosure era, the area has been the subject of ever more intensive arable cultivation, with the exception of pasture adjoining the river Derwent and, this century, Malton Golf Course at the western end of the Proposed Route

Assessment Methods

The principal source used for this Assessment was the Sites and Monuments Register and aerial photograph collection, County Hall, Northallerton, with additional reference to the Royal Commission on the Historical Monuments (England) plotting of cropmarks Two works, by Robinson (Robinson 1978) and Hayes (Hayes 1989) provided much background information, as did the annotated copies of Hayes' 6" maps in the possession of the National Archaeological Record (held by MAP m Malton)

D Powlesland was approached for access to the aerial photographic collection of the Landscape Research Trust, but advised that apparently no further information would be available over and above that from the two above aerial photograph collections

In addition, the Assessment included a rapid field appraisal of the known sites in the Norton area, relevant details are mentioned in the Site Catalogue

Ideally, fieldwalking of the proposed route might add to the available information on sites to be affected However, the length of crop in some of the fields, coupled with the obscuring affects of aeolian sand (if present) in some areas, would inhibit success of that technique

In addition, the stated schedule for the constmction of the Pumping Main at present rules out further aerial reconnaissance In any case it is observed that there is no guarantee of a dry late summer to create the optimum conditions necessary for the aerial survey of cropmarks

Catalogue of Sites affected by the proposed Pumping Main

The sites directly affected by the Pumping Main are listed from east to west, the sequence in which the installation is scheduled to proceed The National grid reference, SMR no , soil and geology type, a short description and estimate of relative importance, details of site visit (where appropriate) and proposals for archaeological examination/mitigation are included for each site

The following abbreviations are employed

(a) Geology – GSA = glaciofluvial sands and gravels
RA = River Alluvium
(b) Soil Association – L = Landbeach
E = Ellerbeck
F3 = Fladbury 3
(c) SMR = County Sites and Monuments Record number

The estimates for the relative importance of each site are based on the non-statutory criteria applied by English Heritage in the scheduling of Ancient Monuments, these inter-related criteria are laid out below, with an indication as to how they might influence the assessment of a given site

Survival/Condition – an earthwork site or undisturbed site would be of greater value than a damaged or disturbed example
Fragility/Vulnerability – the more ephemeral the archaeological evidence, the greater the threat to that evidence For the purposes of this Assessment, the process making for the vulnerability of a site is the installation of the Pumping Main and works associated with it
Documentation – historical records for a site increase the importance by illustrating the complexity and history of a site, and by the moving towards "Total Archaeology"
Group Value – the importance of a site balanced against the criteria for similar sites of the same general type
Period – the presence of an early site will make such factors as condition less important in the judgement of the overall value
Rarity – the rarity of a site of given type will enhance the importance
Diversity – an important factor in the assessment of multi-period 'landscape' sites, obviously the greater the number of periods represented at a site, or the greater the range of activities or remains associated with it, make the importance greater
Potential – a site's potential is enhanced by a greater degree of preservation, the diversity of activity represented and the availability of suitable documentation

SMR 3499, **01, 02, 03, 07, 200, 300** (Figs 2, 3 and 4), SE 845 743 (centre), geology = GSA, soils = L This site consists of an area of cropmarks, including enclosures, a ?trackway and square-ditch barrows This site is essentially a segment of the Iron Age/Romano-British landscape and is of importance due to the early period, diversity of evidence and potential represented

If at all possible, a change of route is proposed for this 'landscape' site so that this complex area can remain unaffected It is suggested that the Pumping Main should run adjacent to Rillington Beck in a south-westerly direction as far as Ruston Plantation, thereafter to rejoin the original route at cSE 839 740 (Figs 2, 4 and 21) Should the diversion not be a realistic option, relatively large-scale excavations should be carried out where the Pumping Mam corridor intercepts this site

SMR 3400 (Figs 9, 10 and 11), SE 796 702 (centre), geology = GSA, soils = L, cropmark double-ditch ?trackway, ?underlying enclosures (SMR 3401) c350m west of proposed route The importance of this site lies in the presumed early date (Iron Age/ Romano-British) and the way that it relates to a former landscape of similar elements Excavation is proposed at the intersection with the Pumping Main at SE 831 725 It is possible that SMR 3400 is the continuation of SMR 3395 (Figs 6 and 7), a cropmark of a parallel ditched feature, and it is proposed that a Recording Brief be carried out during the topsoil stripping of the stretch of Pumping Main between the two sites

SMR 3407, 02 210 (Fig 11), SE 826 722, geology = GSA, soils = L, cropmarks of a group of irregular ?enclosures, almost certainly periglacial ice wedge pseudomorphs/frost-cracking A Recording Brief during topsoil stripping is proposed

SMR 3407, 04 (Fig 12), SE 8205 7197, geology = GSA, soils = L, cropmark double-ditched ?trackway The archaeological significance of this site is due to the manner in which it inter-relates with similar features (eg SMR 3407 02) m the Iron Age /Romano-British landscape The Pumping Main intersects this feature and an excavation is proposed

SMR 3407 0500, (Fig 12), SE 8185 7175, geology = GSA, soils = L, several cropmarks are present to the south-west of SMR 3407 04 and a Recording Brief is proposed for these features during topsoil stripping

SMR 3407, 02 (Fig 12), SE 8167 7147, geology = GSA, soils = L, cropmark double- ditched Dike or trackway Again, the importance of this feature lies in the manner in which it forms an element of a complex Iron Age/Romano-British landscape The Pumping Mam intersects this feature and an excavation is proposed

SMR 1862, 37 007 (Fig 12), SE 8140 7118, geology = GSA, soils = L, cropmark of the Roman road from Norton to Settrington The information which this site may supply into the Romano-British communications of the area accounts for this site's significance However, as the site is a positive feature consisting of an metalled embankment, and as such is likely to have suffered ploughing damage, a limited excavation is proposed

SMR 3407, 01, and 01 100 (Fig 13), SE 8146 7114, geology = GSA, soils = L, double-ditched trackway or dike, form suggests a multi-phase feature, with a sinuous ditch, SMR 3407 01 100 present to the east An excavation of this

significant element of the Iron Age/Romano–British landscape is proposed at the location where interception by the Pumping Main occurs

SMR 3000, 13, 006, 007 (Figs 13 and 14), SE 8090 8175, geology = GSA, soils = L, cropmark triple Dike ("Norton Three Dikes") with possible later features superimposed (SMR 3407 19, linear features) This landscape feature is of high significance as a presumed later prehistoric land boundary, the enduring importance of which in post–medieval times is illustrated by the fact that it formed the western boundary of the Lordship of Settrington in 1599–1600 (Robinson, no 219) An excavation is proposed where interception with the Pumping Main occurs, in addition to providing a section or sections through the triple Dike the excavation should examine the later activity suggested by the presence of the linear and the additional cropmarks mentioned above

SMR 3409 (Figs 13 and 14), SE 8068 7060, geology = GSA, soils = L, a north to south linear cropmark, interpreted by Robinson (Robinson, no 375) as representing a double–ditched track which forms an offshoot of the Roman road, SMR 3407, 02 200 (= also SMR 1862 37) An excavation is proposed at the point intercepted by the Pumping Main to verify the date and function of this feature

SMR 3417 (Fig 14), SE 8025 8040 (centre), geology = GSA , soils = L A complex area of cropmarks consisting of an oval enclosure containing square–ditch and ring–ditch barrows, plus outlying square–ditch barrows, many with central graves, and in one instance at least, ?secondary graves visible in a barrow ditch, also pits or unditched flat graves In addition, north–west to south–east linear features might represent pre–Enclosure Rigg and Furrow from the operation of one of Sutton's Open Fields or perhaps more recent land drainage

The oval enclosure may represent some form of cemetery boundary or even a settlement enclosure, with the ring–ditches as house–circles In any event the site is of high significance, being virtually unique in East Yorkshire (P Home, NMR York, pers comm), indeed it is of surprise that the site is not Scheduled under the Ancient Monuments Acts There is the additional complication of the presence of buried human remains, the disturbance or archaeological excavation of which requires a Home Office Burial Licence

The proposed pumping main route passes c25m north of the northern boundary of the oval enclosure, and no cropmarks are visible for the confines of this route However, due to the presence of outlying barrows to the east of the enclosure and immediately to the north of the (former) hedge–line along which the route runs, there is a necessity to archaeologically examine this potentially highly significant area well in advance of operations associated with the Pumping Main This will involve topsoil stripping under archaeological supervision and archaeologically excavating any features within the Pumping Main corridor

It should be stated at this point that, given that the Pumping Main route has to pass through this general area (ie between the outskirts of Norton and Norton Howe), on present evidence the proposed route might be as preferable in archaeological terms as any possible diversion It is noted that a diversion to the north of the proposed route would involve a high probability of affecting square–ditch barrows known to extend into the area (Robinson, no 217, SMR 3417 02001 and 3417 02003)

A possible diversion (Figs 14 and 21) would be for the Pumping Main to divert south-eastwards along Cheesecake Lane/Beverley Road to a point at SE 806 7027 thereafter cutting across the field to a point at SE 8055 7018, to run south-westwards along the hedge-line immediately north of Howe Hill The diversion would intercept Langton Road at SE 7986 7015 and rejom the original route at SE 7963 7020 However, the proposed diversion would intercept a series of linear cropmarks at SE 8035 7029 (SMR 3417 04000) and ?enclosure cropmarks at SE 8065 7040 (SMR 3503, perhaps of periglacial origin) at which points excavation would be required, more particularly for the former Further, there is no guarantee that the suggested diversion would not intercept further burials outlying from the main concentrations of burials, accordingly it is suggested that the original proposed route be employed along with the prior full examination of the corridor as outlined above

SMR 1982 (Figs 15 and 16), SE 797 702, geology = GSA/RA, soils = L/F3, cropmarks/soilmarks (formerly earthworks) associated with the Deserted Medieval Village of Sutton The known site of Sutton village lies c100-200m north-west of the proposed Pumping Main route A series of parallel south-west to north-east features (SMR 1982) known from an aerial photograph, which are intercepted by the route at SE 7967 7022, possibly represent medieval activity However, the low-lying location of these features (apparent from a site visit), which are adjacent to the bank of Mill Beck, and away from the known site of the village on the terrace above, suggests that their origin could be as relatively recent drainage elements

A limited trial excavation is proposed, in advance of topsoil stripping, in order to verify the status of the features represented by SMR 1982, should the site prove to be archaeologically significant, more large-scale excavations should be undertaken

SMR 1891 (Figs 15 and 16), SE 7945 7020 (centre), geology = GSA, soils = Ellerbeck, cropmarks of a group of at least eighteen square and curvilinear enclosures thought to represent a square-ditch barrow cemetery The Pumping Mam passes within c50m of this group A Recording Brief is proposed during the topsoil stripping of this area for a 300m stretch along the southern bank of Mill Beck (centred on SE 7954 7018) in the vicinity of the features The Recording Brief may also yield information conceming to the position of the possible north to south Roman Road (Robinson 1978, no 237), and shed light on Romano-British activity represented by 'ums' found in the last century (SMR 1941)

SMR 1981 (Fig 16), SE 792 702, geology = GSA, soils = E, cropmark of a large multiple ring-ditch, c100m in diameter The Pumping Main passes c20-30m north of this feature, which by form alone is of great potential importance The general size and appearance of the cropmark suggests a multi-phase feature in the manner of the Bronze Age box-rampart hillfort at Paddock Hill, Thwing (Manby 1983) However, the location of this feature within a paddock associated with White Wall Racing Stables suggests that a recent horse-training ring is represented During a rapid field appraisal it was noted that a slight semi-circular terrace exists in the position of the feature shown on the aerial photograph Furthermore, the paddock has an oval training ring in the same general area as the feature in question, and conversations with local residents suggest that a circular training ring existed prior to

the present oval example The likelihood therefore is that the multiple ring-ditch is a modem feature

Three south-west to north-east linear cropmarks are present in the field immediately to the north of the proposed pumping main, and a Recording Brief is proposed in this area during topsoil stripping to archaeologically examine both the linear features and any activity associated with the multiple nng-ditch, should archaeological significance become evident

(SMR no number), SE 7905 7021, geology = GSA, soils = E, a possible line of a Roman Road follows the course of the modem Welham Road A Recording Brief is proposed at this point, during topsoil stripping and also during the installation of the main under the modern road

(SMR no number), SE 7851 7038, geology = GSA, soils = E, 'Welham Trod' This trackway is marked on Hayes' map (Hayes NAR) as "Roman Road (site of)" but is generally supposed to be later in origin (Robinson, no 405), perhaps as a coaching road A Recording Brief is proposed for this site during topsoil stripping and installation of the Pumping Main, if required

Proposed Norton Spur Main

In addition it is understood that a spur main is proposed to run m an area on the eastern fringe of Norton, approximately SE 808 707 to 805 712 to 800 715, no firm details of the route being put forward as yet The entirety of this route consists of Glaciofluvial sands and gravels with Landbeach association soils

It is suggested (Fig 21) that the proposed spur mam should pass east of Norton Three Dikes (SMR 3000 13 07) from cSE 8095 7070 to a point close to the former railway line at SE 809 715, thus avoiding two concentrations of square-ditched barrows (SMR 3419) and a complex of linear cropmarks (SMR 3418) This route will however call for the excavation of areas of Norton Three Dikes and the Norton-Settnngton Roman Road in the vicinity of SE 807 713

It is further suggested that the route follow the former railway line north-westwards and skirt the Malton Bacon Factory, keeping well away from known sites in the area cropmark enclosures at SE 8010 7115 (SMR 64) and SE 803 718 (SMR 3421), and Roman activity under the Eastfield Estate centred at SE 799 712

A Recording Brief on the route of the spur mam north-west of the two proposed excavations is advisable because of the true extent of Roman activity on the eastem fringes of Norton is, as yet, unknown

Conclusions

From the available evidence, outlined above, it is clear that the proposed pumping main cuts through a multi-period landscape of considerable archaeological importance

Many of the sites are known through the aerial photography of cropmarks, and a lesser number through fieldwork The two Soil Associations (Landbeach and Ellerbeck) associated with the Glaciofluvial sands and gravels underlying the bulk of the proposed route, are generally susceptible to the formation of cropmarks However, the possible deposition of aeolian sand could act against this in some areas, both by masking sites and by merely providing coarse detail of otherwise complex sites The presence of aeolian sand is most likely to be concentrated in those areas nearest to the Wold escarpment

It is stressed that most of the sites affected by the proposed Pumping Main are linear features (eg SMRs 3400, 3407 04, 3407 02, 3407 01, 3407 02 200, 3000 13 006/7) which extend for distances of up to a kilometre or more away from the proposed route, so that it is inevitable that these sites will be intersected at some point The cropmark Dikes/land boundaries and roads/trackways are significant in that, as long-lived features, they have the potential of holding much information into the environmental history of the area through different periods of time, as well as having a crucial bearing on the understanding of early land allotment, settlement and communications

Of the two 'landscape' sites, a diversion in the route of the proposed Pumping Main is suggested to avoid the cropmark complex at the eastern end of the route (SMR 3449) The important and complex site to the south of Norton (SMR 3417) could be by-passed, but it must be again stated that this diversion has no guarantee of ensuring the protection of archaeological remains of equal value to that preserved by the diversion, indeed some interception of archaeological features would be inevitable (see above) Bearing m mmd that the original proposed route is, from cropmark evidence, apparently devoid of archaeological remains, coupled with the extra expense caused by the diversion, it is suggested that the original line should be followed, with the proviso that full archaeological examination of the area be carried out well in advance of operations associated with the Pumping Main

Any detrimental affects of the Pumping Main could be mitigated by ensuring that the corridor stripped of topsoil be kept to the minimum width possible wherever the archaeological features listed above are intercepted

The specific threat of operations connected with the Pumping Mam should be seen as an opportunity to recover important archaeological information concerning the multi-period landscape affected Excavation of the linear features should concentrate on recovering details as to their form and the environmental history of the area To these ends it is not envisaged that excavation would involve the complete excavation of linear features where interception with the Pumping Main occurs More widespread excavation is anticipated for any settlement, occupation-

type or burial features within the Pumping Main corridor It should be stated that such remains could possibly be associated with the more easily perceived linear Dikes and boundaries, and allowance should be made for the archaeological examination of such remains, if encountered (the work programme supplied to Yorkshire Water concentrates on the available evidence) Therefore the suggested diversion at the eastern end of the route (to avoid SMR 3449) is strongly recommended

All excavations should have a report prepared to Frere Level III with suitable data recovery levels, C – D for prehistoric and romano–British, B – C for medieval

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