ARCHAS
CULTURAL HERITAGE LTD

Guardbridge to St Andrews, Fife
Renewable Energy Centre and District Heating Network, Archaeological Monitoring
Data Structure Report

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ARCHAS Cultural Heritage Ltd

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Executive Summary

ARCHAS Cultural Heritage Ltd were commissioned by Vital Energi to undertake archaeological monitoring during ground breaking works associated with the construction of a Renewable Energy Centre, biomass fuel storage and processing as well as the installation of a district heating pipeline between Guardbridge and St Andrews in Fife.

The watching brief followed the placement of a planning condition upon the proposed development by Fife Council and Fife Council Archaeology Unit as the route of the pipeline and associated works were identified by Fife Council and Fife Council Archaeology Unit as having archaeological potential.

During the watching brief significant archaeological remains were encountered which preliminary assessment has dated to the Early Neolithic and a small number of features relating to post-medieval land use. A rough yard surface was also revealed and is likely to relate to the Seafield Brick and Tile Works. These remains were investigated and recorded as they lay within the route of the pipeline and were unable to be preserved in situ.

A record of the evaluation has been deposited with the Online Access to the Index of Archaeological Investigations (OASIS) website hosted by the Archaeological Data Service (OASIS ID archascu1-259885) and with Discovery and Excavation in Scotland (DES), the annual publication of fieldwork by Archaeology Scotland.

1 Introduction

1.1 General

1.1.1 ARCHAS Cultural Heritage Ltd were commissioned by Vital Energi (contact Ashley Walsh) to undertake archaeological monitoring during ground breaking works associated with the construction of a Renewable Energy Centre, biomass fuel storage and processing as well as the installation of a district heating pipeline between Guardbridge and St Andrews in Fife.

1.1.2 Predominantly running adjacent to the A91, the majority of the excavation was located in rich and fertile agricultural land free from recorded development with parts at either end located in urbanised areas within Guardbridge and St Andrews. The proposals for development were identified by Fife Council and Fife Council Archaeology Unit (contact Douglas Speirs) as having archaeological potential.

1.1.3 Upon submission of the planning application, Fife Council Archaeology Unit imposed a Planning Condition upon the development. Through Planning Condition number 8, imposed as part of Planning Application 14/02334/EIA, Fife Council state:

> "the developer shall secure the implementation of a programme of archaeological work in accordance with a detailed written scheme of investigation which has been submitted by the developer and approved in writing by this Planning Authority."[1]

1.1.4 The FIFEplan Policy 14 provides the basis for the placement of the condition. Policy 14 states that all archaeological sites are considered to be of significance and that any development must ensure remains are preserved *in situ* in an appropriate setting. If this is not possible, appropriate archaeological investigation, recording and mitigation should be proposed.

1.1.5 Prior to work commencing on site ARCHAS prepared a Written Scheme of Investigation (WSI) which investigated the history of the development area, and outlined the standards and methodology to be adhered to during the evaluation.

1.1.6 Excavation and monitoring was undertaken over 62 days from the 23rd October 2015 to August 2016. The majority of the groundbreaking works were excavated under close archaeological supervision with the exception of those located in areas that had previously been identified as heavily disturbed by previous development. The excavations were completed by Malcolm Construction and were monitored by Joe Doran and Alastair Rees, whilst the archaeological excavations were undertaken by Ross Cameron, Joe Doran and Alastair Rees. The weather conditions were varied throughout.

1.1.7 ARCHAS Cultural Heritage Ltd conforms to the standards of professional conduct outlined in the Chartered Institute for Archaeologists (CIfA) Code of conduct, and relevant Standards and Guidance documents produced by the CIfA.

[1] Fife Council Draft Decision Notice – 14/02334/EIA – 29/10/14

1.2 Site Location and Setting

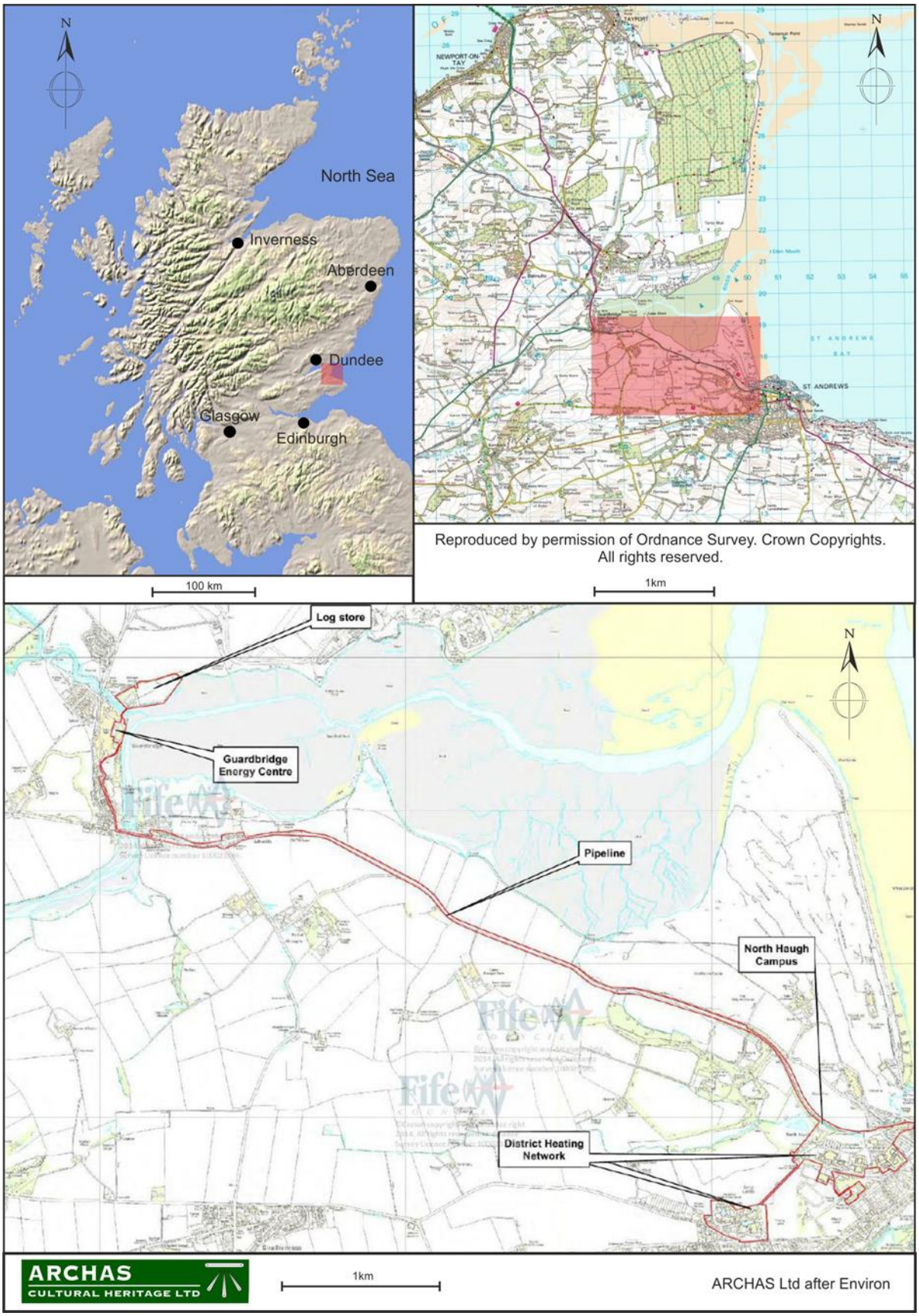


Figure 1: Site location with the indicative site location indicated in red

General

1.2.1 The proposed development lies in the north eastern corner of Fife, running between Guardbridge (at roughly NGR: NO 45419 19868), crossing the River Eden before leaving Guardbridge (NGR: NO 45310 18811) and following the A91 towards Upper and Lower North Haugh and John Burnett Hall of Residence in St Andrews. The pipeline enters St Andrews around NGR: NO 49640 16958.

1.2.2 The route of the pipeline and subsequent watching brief predominantly hugged the A91, running parallel along the southern side of the road before crossing to the northern side just prior to entering St Andrews. The route only deviates slightly from the A91 when it crosses around the Fast N' Fresh cafe in Edenside, just east of Guardbridge.

Geology

1.2.3 As to be expected along an extensive pipeline the geology of the route was varied. The drift geology at the eastern end of the proposed development site comprised Raised Marine Deposits of Flandrian Age. At the western end, the drift geology comprised Devensian clays, silts, sands and gravels. These superficial deposits of sand and gravel formed up to 2 million years ago in the Quaternary Period and are characteristic of a local environment previously dominated by shallow seas.

1.2.4 The underlying bedrock geology is predominantly sedimentary rock cycles, namely Strathclyde Group Type of the Anstruther Formation. This sedimentary bedrock formed approximately 331-335 million years ago in the Carboniferous Period. This is characteristic of an environment once dominated by swamps, estuaries and deltas. Only at the southern tip of the route, around St Andrews is the bedrock geology different. Here the Anstruther Formation gives way to the Pitenweem Formation, also a sedimentary bedrock from the Carboniferous Period.[2]

[2] www.bgs.ac.uk –02/07/15

2 Archaeological and Historical Background

2.1 General Historical Background

General

2.1.1 The history and archaeology of the eastern end of the development area is dominated by the presence of the major medieval ecclesiastical centre of St Andrews. However, human occupation along the route is not limited to the medieval period, with evidence for a prehistoric presence, post-medieval occupation and significant industrial activity at Guardbridge at the western end of the scheme.

Prehistoric

2.1.2 The rich, fertile farmlands between St Andrews and Guardbridge would have been attractive areas of settlement for the prehistoric occupants of the area.

2.1.3 An enclosure or unenclosed settlement has been noted at Kincaple, south of Kincaple Farm (NMRS No: NO 41 NE 21) and another, a short distance further south at West Third (NMRS No: NO 41 NE 17). Both of these were recorded by analysis of aerial photography in the 1980s and are likely to be prehistoric in origin.

2.1.4 At the western end of the development, just east of Guardbridge aerial photography has also recorded the presence of a substantial Fort (NMRS No: NO 41 NW 40) and the cropmark of a possible square barrow (NMRS No: NO 41 NE 70) at Balgove to the south west of Strathtyrum House.

Medieval

2.1.5 One Scheduled Monument lies in close proximity to the development, the Guard Bridge itself from which Guardbridge takes its name (NMRS No: NO 41 NE 1). The bridge bears the date 1419 and is on record as having been constructed by Bishop Wardlaw of St Andrews. It is on record as having been repaired in 1685.

2.1.6 Medieval burials recorded during archaeological monitoring around the new Gateway Building in 1999 (NMRS No: NO 51 NW 305) indicate that although the site lies outside the main medieval occupation of St Andrews, some occupation or human involvement extended westwards into the development area.

2.1.7 A great medieval cross is reputed to have stood at Strathtyrum in the 15th century (NMRS No: NO 41 NE 13) and medieval remains and pottery were identified at Kincaple Farm (NMRS No: NO 41 NE 67) during archaeological monitoring in 1995.

Post-Medieval

2.1.8 Wealthy country houses were constructed in the area east of St Andrews in the post-medieval period. These include Strathtyrum House (NMRS No: NO 41 NE 95) and Edenside House (NMRS No: NO 41 NE 91).

2.1.9 The Royal and Ancient Golf Club was formed in St Andrews in 1754 and in 1764 they created the world's first 18 hole golf course on the links immediately north of the proposed development.

2.1.10 Guardbridge Paper Mill lies at the western end of the development. This important industrial site developed in a disused distillery which had been operated by the Haig family from 1810 to the 1860s. William Haig also built a pantile and drainpipe works, while the town of Guardbridge developed to house the workers.

2.1.11 To the north east of Easter Kincaple Farm and north of the pipeline, a brickworks was constructed c.1850. Demolished c.1950, the brickworks had a direct connection to the railway which was constructed in 1852. This was closed in 1969.

2.2 Map Regression

General

2.2.1 A large number of maps were consulted in order to assess the development route and pinpoint any features which may previously have gone unrecorded. Until the production of the first Ordnance Survey map in 1854, map making in Scotland was more localised and individual with each map displaying a varying level of detail. A list of maps consulted can be viewed in the Bibliography.

Pre-Ordnance Survey Maps

2.2.2 The earliest detailed maps of Scotland were produced by Timothy Pont who lived from the 1560s until c.1615. One of Pont's maps of Fife survives, pasted onto the corner of a later work by Robert Gordon, dateable from the mid-17th century, but other maps which would have encompassed the development area do not survive.

2.2.3 However, in the early to mid-17th century the importance of Pont's work was recognised and the Dutchman Joan Blaeu used Pont's existing maps as the basis for his *Atlas Novus* which was published in 1654. Blaeu engraved reproductions of the surviving Pont manuscripts and engaged Robert Gordon of Straloch to re-work seven of the Pont maps which had become illegible, while producing three more maps to ensure complete coverage of Scotland. It is clear that these 17th century manuscripts retain 16th century information.

2.2.3 The detail in these early maps is insufficient to show anything but the largest of sites. Both St Andrews and Guardbridge are depicted, while many of the settlements around the route of the pipeline are also shown. These include Keankeple (Kincaple), Strakinnes (Strathkinness) and Strathtyrum. The presence of these allows the route of the pipeline to be generally plotted. No previously unrecorded settlements are shown in the area which cannot be tied to sites adjacent to the pipeline today.

2.2.4 John Adair's The East Part of Fife' from 1684 shows a good level of detail around Strathtyrum. This is shown as a substantial dwelling sitting within a small group of trees, and a rectangular enclosure, presumably a designed landscape.

2.2.5 William Roy's 'Military Survey of Scotland' conducted between 1747 and 1755 (Figure 2) provides much greater detail than shown on earlier maps. Roy's work revolutionised map making in Scotland, containing a lot more terrain detail than previously shown. Although the map was the result of 'rapid reconnaissance rather than a measured topographic survey'[3], the various inaccuracies can be forgiven in providing us with the first cartographic view of Scotland with any level of detail – a snapshot of mid-18th century Scotland.

[3] Fleet C., Wilkes M. & Withers, C. 2011 Scotland – Mapping the Nation, 88

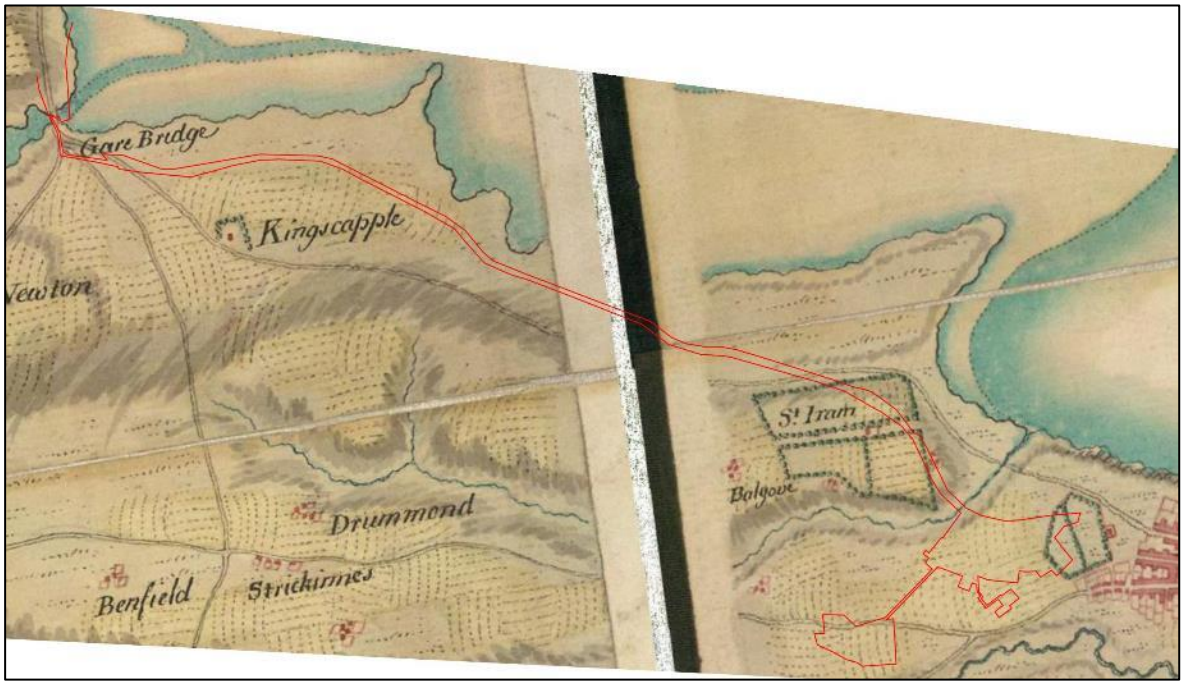


Figure 2: Extract from William Roy's Military Survey of Scotland with a general indication of the proposed planning outline as indicated red. © The British Library Board. All Rights Reserved (Roy Military Survey of Scotland)

2.2.6 William Roy's map shows a much more formalised designed landscape around St.Iram (Strathtyrum), with enclosures bordered by trees. It is notable that the medieval town of St Andrews does not extend as far as the North Haugh. The extent of the development as outlined by the planning application in this area essentially nestles between the designed landscape of Strathtyrum and that around a small unnamed structure on the western periphery of St Andrews.

2.2.7 Although it cannot be said with certainty, the route of the road shown on Roy's mid-18th century map appears the same as the modern A91 for much of the route. This is especially true along the eastern half of the route as it leaves St Andrews and snakes along the northern perimeter of the Strathtyrum designed landscape. The only significant change in the route of the road is at the western end, where the road as shown on Roy deviates slightly to pass to the south of Kingscapple (Kincaple), before heading back north east to Gare Bridge (Guardbridge). The modern road runs significantly to the north of Kincaple. Either side of the road the only indication of human occupation is irregular pre-improvement field systems. No settlement is shown at Gare Bridge or to the north of the River Eden where the proposed development begins.

2.2.8 Roy also shows the road running from the modern South Street in St Andrews (the B939) running south east, in close proximity to the development area around the John Burnett Halls of Residence.

2.2.9 Two maps were completed in the mid-1770s which confirm the route of the development site as devoid of significant occupation in this period. John Ainslie's 'County of Fife' from 1775 has excellent detail (Figure 3). The route of the road now conforms the modern A91, running well north of Kincaple. Another high status dwelling is shown on the north side of the road, immediately east of Guardbridge. This site, recorded as 'Edenside', conforms with Edenside House adjacent to the A91 today. The development area around the North Haugh and the John Burnett Halls of Residence appears a little more congested. A water mill is recorded along the eastern perimeter of the North Haugh development boundary.

2.2.10 Contemporary with Ainslie, in 1776 George Taylor and Andrew Skinner completed a survey ('The Road from St Andrews to Woodhaven & Newport; the road from Crail to St Andrews and Cupar'), part of which specifically focussed on the road between St Andrews and Guardbridge. Three milestones are recorded along the route.

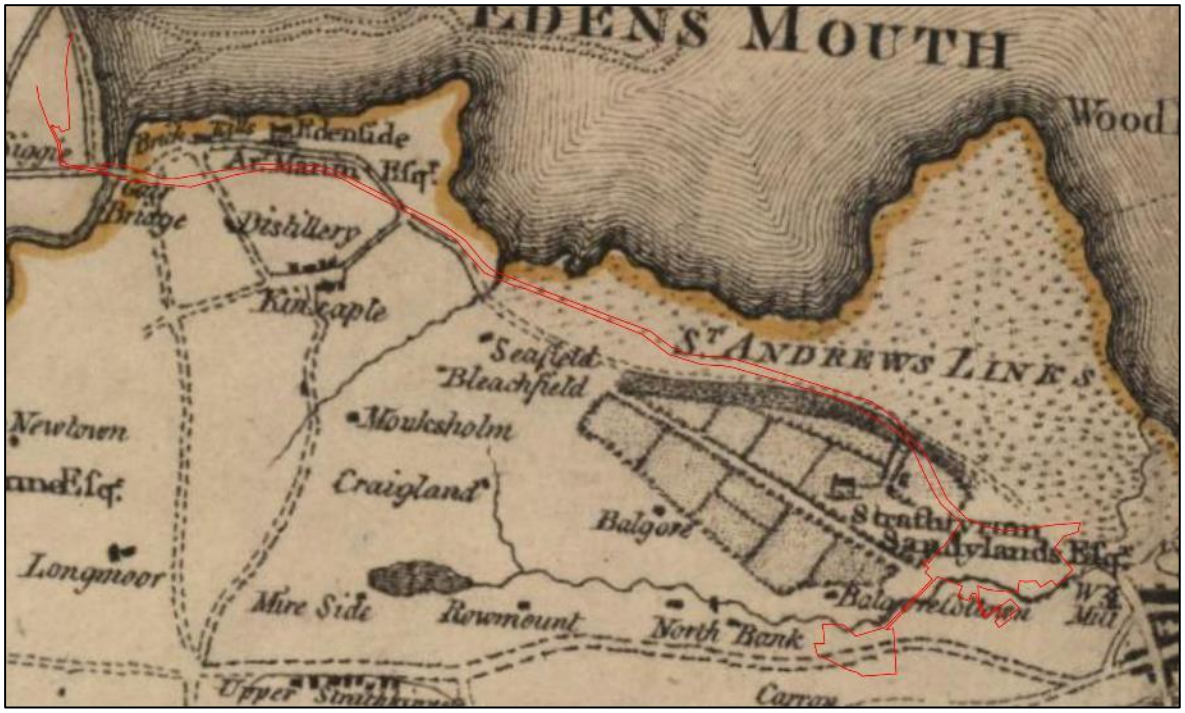


Figure 3: Extract from 'The County of Fife' produced in 1775 by John Ainslie with an indication of the development area plotted in red

Ordnance Survey Maps

2.2.11 The Ordnance Survey began their survey of the St Andrews area in 1854, when they compiled a detailed town plan of St Andrews (1:1056 Ordnance Survey large scale Scottish Town Plans: Town Plan of St Andrews). This map confirmed that the development area lies outside the historic town of St Andrews and provided no new information on the route of the proposed development.

2.2.12 The most detailed maps from the 1st edition of OS surveying in the St Andrews area are the 6 inch to 1 mile Fife Sheets. The proposed development area is covered by Fife Sheet 6, Fife Sheets 7 and Fife Sheet 12. All of these were surveyed in 1854 and published in 1855.

2.2.13 The Ordnance Survey six inch Fife Sheet 7 from 1855 reveals the presence of a brickworks with associated tram line at Seafield. Plotting the modern route of the development against this 1st edition map would indicate that this site, and in particular the tramline, may be crossed by the pipeline. This is likely the same site as identified in the NMRS (Section 2.1.11), which was plotted by the NMRS as to the north.

2.2.14 The only other newly identified site of any note is the presence of a curling pond on the 2nd edition 25 inch to 1 mile Fifeshire 009.09 from 1895. This shows a curling pond at the northern limits of the development at the North Haugh.

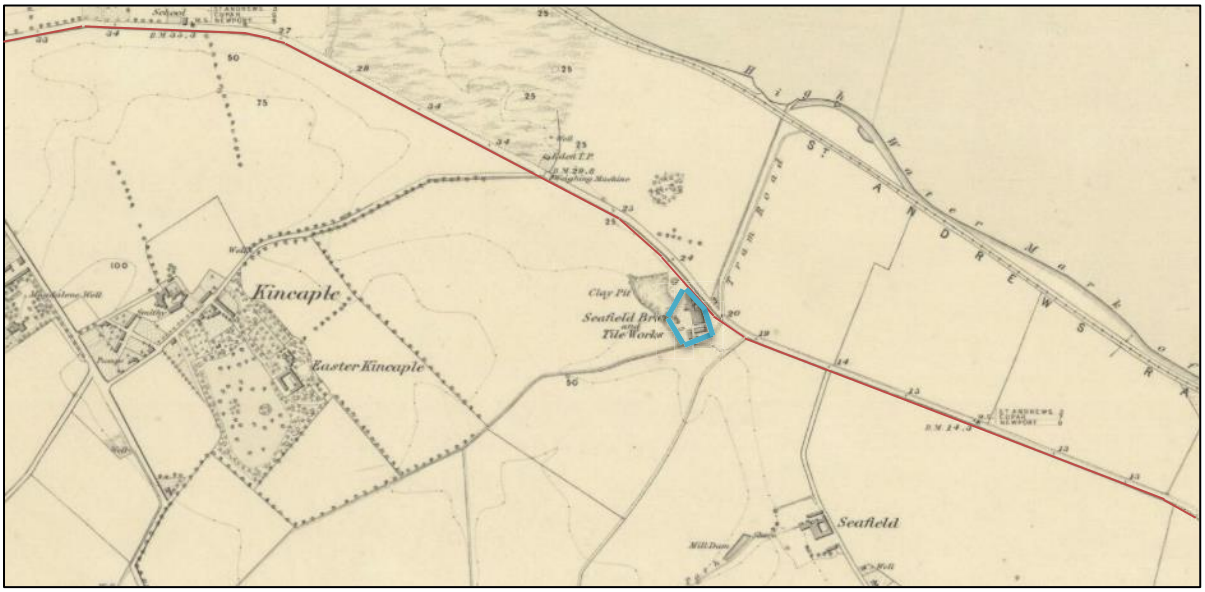


Figure 4: Extract from Ordnance Survey Six Inch Fife Sheet 7 showing the route of the pipeline plotted in red and the location of the Seafield Brickworks outlined in blue

Conclusions

2.2.1 The map regression shows the development area to be one essentially devoid of significant development except for its eastern and western ends within Guardbridge and St Andrews respectively.

3 Methodology

3.1 Watching Brief – Definition & Purpose

3.1.1 The definition of an archaeological watching brief is a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site on land, inter-tidal zone or underwater where there is a possibility that archaeological remains or deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive. This definition and *Standard* do not cover chance observations, which should lead to an appropriate archaeological project being designed and implemented, nor do they apply to monitoring for preservation of remains *in situ.*

3.1.2 The purpose of a watching brief is:

- to allow, within the resources available, the preservation by record of archaeological deposits, the presence and nature of which could not be established (or established with sufficient accuracy) in advance of development or other potentially disruptive works
- to provide an opportunity, if needed, for the watching archaeologist to signal to all interested parties, before the destruction of the material in question, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard
- A watching brief is not intended to reduce the requirement for excavation or preservation of known or inferred deposits, and it is intended to guide, not replace, any requirement for contingent excavation or preservation of possible deposits
- The objective of a watching brief is to establish and make available information about the archaeological resource existing on a site
- To identify and record any features or objects of archaeological importance that could be damaged or destroyed by this development, while minimising any delays or disruption to the dismantling.

3.2 Monitoring works

3.2.1 Most ground-breaking works were executed by a mechanical excavator fitted with a toothless bucket except where tarmac needed to be broken, in which case a toothed bucket was used out of necessity or by hand. These were monitored by a qualified archaeologist.

3.2.2 Due to the extensive length of the pipeline route the development area has been subdivided into separate zones for ease of monitoring and recording. These zones follow the categorization designed by Vital Energi. Descriptions and locations of Zones are provided in Section 4 and their locations are summarized below (see Figure 5).

3.2.3 In the rural areas along the pipeline route between Guardbridge and St Andrews a strip of topsoil was first excavated to provide access for plant machinery and other operations, prior to the excavation of the pipe trench. This spread varied in width from 7m to 15m and was, in most areas, excavated down to natural subsoil with archaeological monitoring. In areas where the initial topsoil strip did not reach the level of the subsoil, the excavation of the pipe trench itself was also monitored.

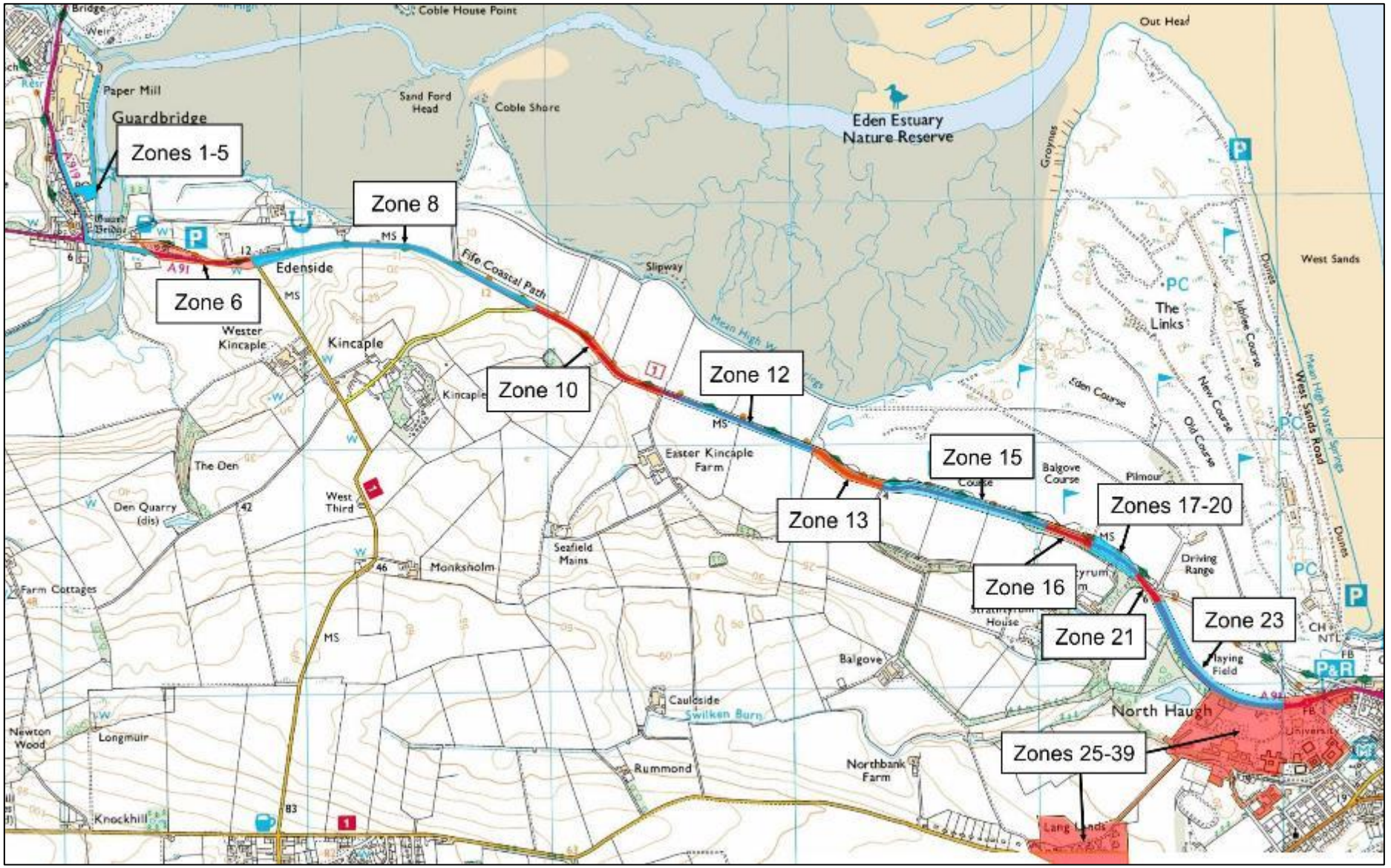


Figure 5: Map showing locations of zones along the development route. ARCHAS Ltd after Ordnance Survey. Reproduced by permission of the Ordnance Survey. Crown Copyrights. All rights reserved.

3.2.4 Following initial recommendations by ARCHAS that formed part of the Written Scheme of Investigation,[4] the western end of the development (Zones 1-5 within Guardbridge) were monitored by a fortnightly inspection due to its location in an area heavily disturbed by previous modern development.

3.2.5 Following initial continuous monitoring, ground-breaking works in St Andrews were also monitored by intermittent inspection after they were also found to be heavily disturbed by modern development and landscaping, particularly in the area around David Russell Apartments (Zones 25-39).

3.2.6 Where any features of archaeological potential were encountered these were investigated by the ARCHAS on site team. Any archaeological deposits or artefacts recovered were recorded to ARCHAS Ltd and Chartered Institute for Archaeologists (*CIfA*) standards and relevant details noted down on ARCHAS *pro forma* sheets. A detailed photographic record was also maintained.

[4] Cameron, R *Guardbridge to St Andrews, Fife: Renewable Energy and District Heating Network Archaeological Monitoring – Written Scheme of Investigation*, ARCHAS Cultural Heritage Ltd unpublished Grey Literature report

4 Results

4.1 General

4.1.1 The archaeological monitoring revealed occasional isolated features relating to agricultural land use and significant prehistoric remains located in Zone 8.

4.1.2 A description of all significant deposits and features identified in each zone is provided below. All context numbers for layers and feature fills are bold and recorded within curved parentheses (**xxx**) and cuts are recorded within squared parentheses [**xxx**] and structures within braces or curly brackets {**xxx**}. Artefacts are recorded by small finds numbers and are displayed with the initials **SF** in bold followed by the corresponding number in the register.

4.1.3 The locations of the Zones discussed can be viewed in Figure 3.

4.2 Zones 1-5

4.2.1 Zones 1-5 were located at the north-western extent of the route (Figure 3), within the town of Guardbridge itself. Due to their location within an area that had already been subject to much disturbance, these zones were only monitored by intermittent inspection, on 5th November 2015, 20th January 2016 and 9th March 2016.

4.2.2 Upon inspection the ground breaking works revealed that in the few areas that were not heavily disturbed, tarmac road surface was visible above road makeup, which overlay clay and sand natural subsoil (see Plate 1). No archaeological deposits were noted.

Plate 1: View of pipe trench in Zone 4 showing tarmac and road makeup over subsoil

4.3 Zone 6

4.3.1 Zone 6 was located south of the A91, in the field that was bounded by Guardbridge to the west and the Edenside to Strathkinness road to the east (Figure 3). Stripping in Zone 6 was monitored over six days during 11th April 2016 to 25th April 2016.

4.3.2 The ground breaking works revealed moderately compact dark grey-brown silty loam topsoil from 0-0.40m below ground level (BGL) overlying a subsoil consisting of mid red-brown silty clay with occasional patches of sand. No archaeological deposits were noted.

4.4 Zones 7, 9, 11, 14, 18, 20, 22 and 24 – Road Crossings

4.4.1 Zones 7, 9, 11, 14, 18, 20 and 22 were located at points along the development route next to the A91 where the pipeline crossed modern roads. As such, these were only monitored by intermittent inspection. Where monitored, all excavation in these zones revealed modern tarmac over road makeup overlying natural deposits.

4.5 Zone 8

General

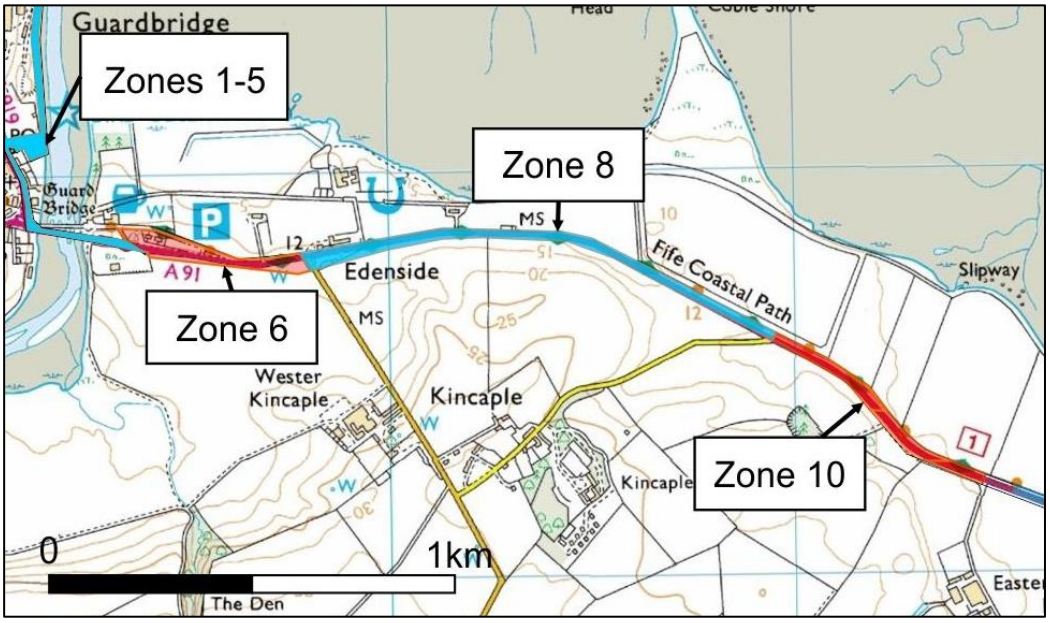


Figure 6: Location of Zone 8. ARCHAS Ltd after Ordnance Survey. Reproduced by permission of the Ordnance Survey. Crown Copyrights. All rights reserved.

4.5.1 Zone 8 was located south of the A91, in the field to the east of the Edenside to Strathkinness road (Figure 6). Its eastern boundary is formed by the minor unclassified road that heads south-west from the A91 to the village of Kincaple. The development area skirts the Fast N' Fresh café at its western extent and then hugs the A91 as it proceeds east towards St Andrews. Topsoil stripping of Zone 8 was monitored over five days between 11th April 2016 to 13th May 2016.

4.5.2 Due to a desire on the part of the contractor to completely separate topsoil and subsoil for reinstatement purposes, the topsoil strip at Zone 8 was conducted so as to leave c.0.10m of topsoil left in place prior to the excavation of the pipe trench. As subsoil was not revealed for inspection during the initial strip, the excavation of the pipe trench was also monitored. This took place over four days between 26th May 2016 to 1st June 2016.

4.5.3 The stratigraphy of the natural soil deposits at Zone 8 was notably different from elsewhere along the development route, and significantly more variable than elsewhere. The topsoil varied in depth from c. 0-0.40m BGL at the west end of Zone 8, where the strip was situated at the top of a small ridge as the route diverts around the cafe, to 0-0.85m BGL at its eastern extent. Between its east and western ends, the route of the pipeline runs just south of the A91 and is situated at the bottom of the steep north-facing slope of the small ridge (Plate 2). In places here the overlying topsoil was far thicker than elsewhere, measuring 0-1.60m BGL. This greater thickness was attributed in part to soil creep down the steep slope, but may also be related to modern artificial attempts to raise the ground level to alleviate flooding near the

road. The topsoil comprised a dark brown silty loam. The underlying subsoil varied across Zone 8, from mid to dark red-brown clay across its western and central parts, with occasional gravel deposits, to a fine and soft light orange-yellow sand at its eastern end.

Plate 2: General view along Zone 8 facing north west

4.5.4 During the Monitoring of the pipe trench excavation several archaeological features and deposits were noted at the east end of Zone 8. Ground breaking works were suspended so that excavation and recording of the features noted could be undertaken. This excavation phase took place over four days between 2nd June and 6th June 2016.

Zone 8 Features - General

4.5.5 A single deposit (**802**) (Plate 3) was noted at the base of the north-facing slope just east of where the pipeline route "doglegs" around the Fast N' Fresh café, towards the western end of this zone. Context (**802**) was sealed by the particularly thick (c.1.60m) deposit of topsoil and made ground and consisted of a spread of dark grey sandy silt with frequent sub-rounded to sub-angular fire-cracked stone inclusions throughout. The deposit measured 5.60m east-west and extended > 2.40m (the trench width) north-south, with a maximum thickness of 0.21m. It appeared to lie within a very shallow cut, [**801**], but the cut was very ephemeral so (**802**) may have just been a deposit as opposed to the fill of a feature.

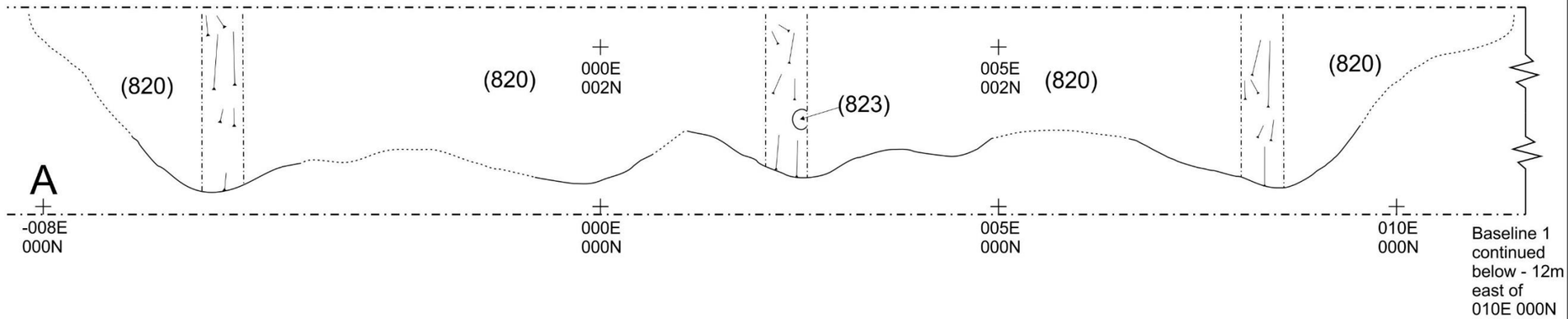
4.5.6 The function and date of (**802**) is uncertain, as no artefacts were recovered, but the proliferation of burnt stones suggest that this may be the remnants of one or more burning events. No other features or deposits were noted in the vicinity of this deposit.

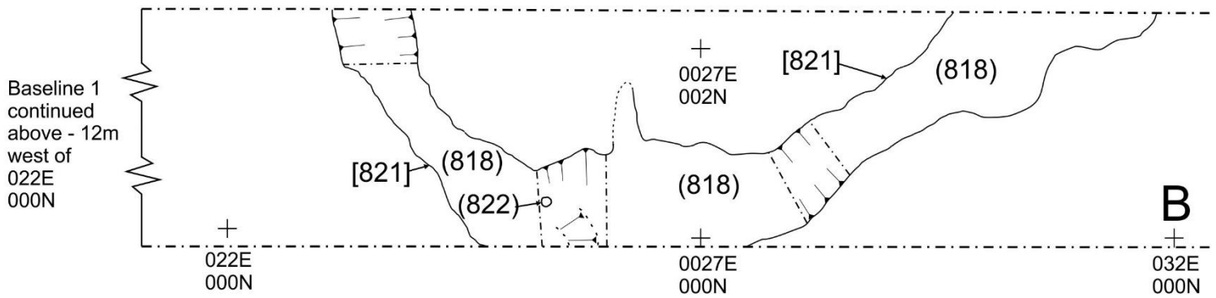
Plate 3: Pre-excavation view of burnt deposit [801]/(802)

4.5.6 Several features were investigated and recorded near the eastern end of Zone 8, in an area where the ground rises slightly to form a very slight plateau. All of the following features and deposits described were sealed by topsoil (**833**), a moderately compact mid grey-brown sandy loam, and all either overlay or were cut into the natural subsoil (**834**), a very fine-grained and soft light orange-yellow sand. Due to the extremely soft nature of this subsoil many of the features and deposits were rather diffuse, which made identification and investigation difficult.

4.5.7 The features at the eastern end of Zone 8 can be roughly divided into an eastern, central and western group (Figure 7 and Figure 8). It should be noted that this is an entirely arbitrary division imposed by the excavators based upon spatial differentiation only, and may not have any relationship to the *actual* division of these deposits by function or period. These areas were those most clearly defined as concentrations of features as seen in the narrow confines of the trench.

Baseline 1 (BL1)





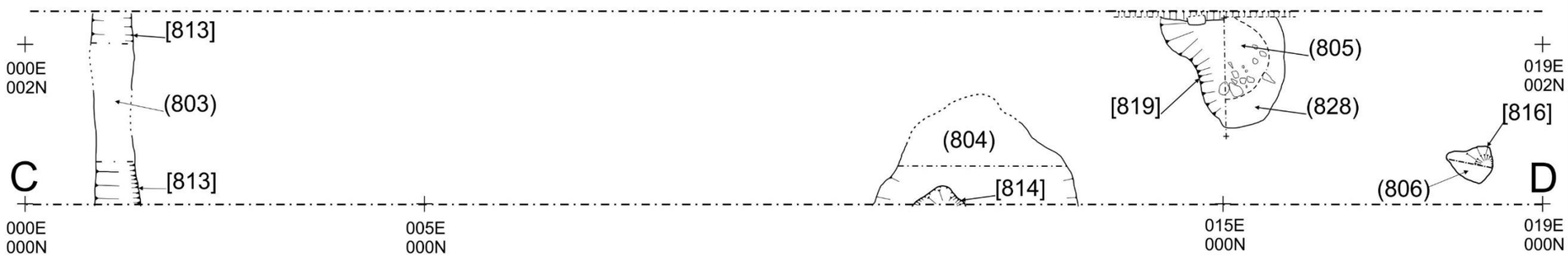
Baseline 1 (BL1) - Location	
A - Western End	NGR: NO 46668 18716
B - Eastern End	NGR: NO 46694 18700

0 3m

Baseline 2 (BL2)

0 3m

Baseline 2 (BL2) - Location	
C - Western End	NGR: NO 46764 18661
D - Eastern End	NGR: NO 46781 18651



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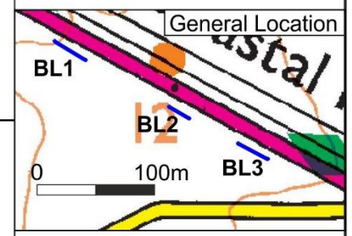
Post-excavation view of Baselines 1 and 2 in Zone 8

Legend
- Limits of excavation
- Edge of feature/context
- Uncertain edge
- Baseline point
- Discontinuation of baseline



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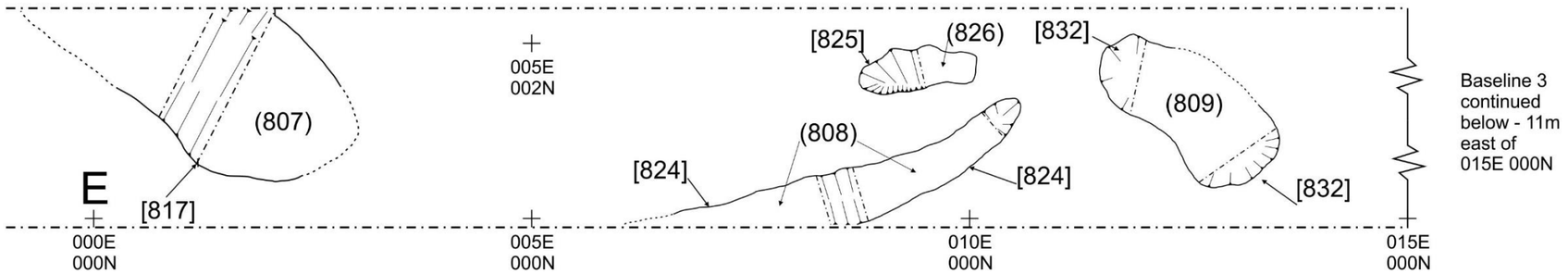
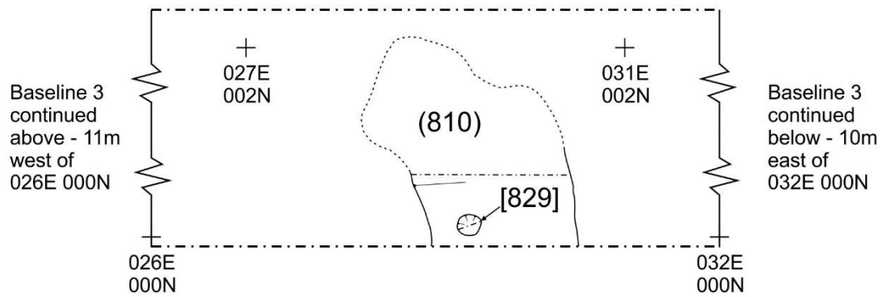
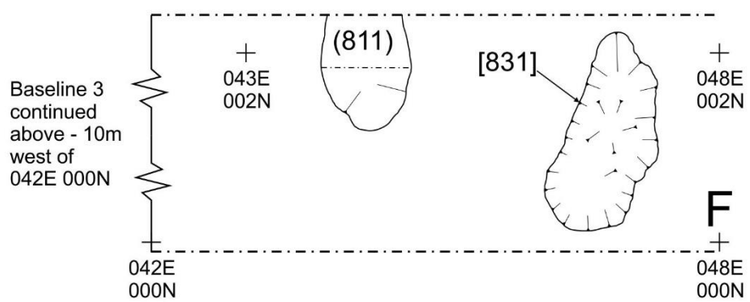
Date:	07/07/16
Scale:	As indicated. 1:60 at A3
Illustrator:	JD & RC

Figure 7: Plan of the Western Group of features (Baseline 1) and the Central Group of features (Baseline 2) in Zone 8

Baseline 3 (BL3)







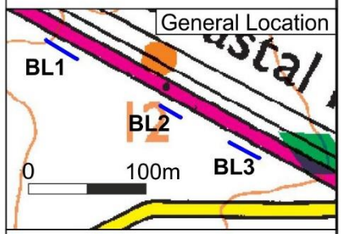
Baseline 3 (BL3) - Location	
E - Western End	NGR: NO 46822 18630
F - Eastern End	NGR: NO 46847 18617

0 3m

213 Guardbridge to St Andrews, Fife

Post-excavation view of Baseline 3 in Zone 8

Legend
- Limits of excavation
- Edge of feature/context
- Uncertain edge
- Baseline point
- Discontinuation of baseline



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Date:	07/07/16
Scale:	As indicated. 1:60 at A3
Illustrator:	JD & RC

Figure 8: **Plan of the Eastern Group of features (Baseline 3) in Zone 8**

Zone 8 Features – Western Group (Baseline 1 - Figure 7)

4.5.8 The western group comprised four features, (**820**), [**821**], (**822**) and (**823**).

4.5.9 Context (**820**) was a large (19.55m E-W) deposit comprising mottled and mixed light grey to black silty sand, with c.5% fire-cracked stones. Three sondages were excavated through this deposit, showing the base of (**820**) to be lumpy and irregular (see Plate 4). The nature of the base, together with the mixed nature of (**820**) and the lack of any obvious cut, suggests that the deposit may be the remains of burning and other activities trampled into the soft sand by people and/or animals. A single flint flake (**SF011**) was recovered from this deposit, suggesting a prehistoric date. It also sealed possible posthole (**823**).

Plate 4: Slot through deposit (820)

Plate 5: Pre-excavation view of [821/818)

4.5.10 Context [**821**] was a curvilinear feature (Figure 9) situated c.11m to the east of (**820**), which extended beyond both edges of the trench (Plate 5). [**821**] was very shallow, with a maximum depth of 0.14m, but appeared to represent a definite cut, containing a single fill, (**818**). (**818**) was a moderately compact mid brown silty fine sand and did not have the mixed character expected from deliberate backfilling, so was likely the result of a period of silting-up. This fill contained a single small fragment of prehistory pottery (**SF013**) and sealed a small posthole or stakehole, (**822**).

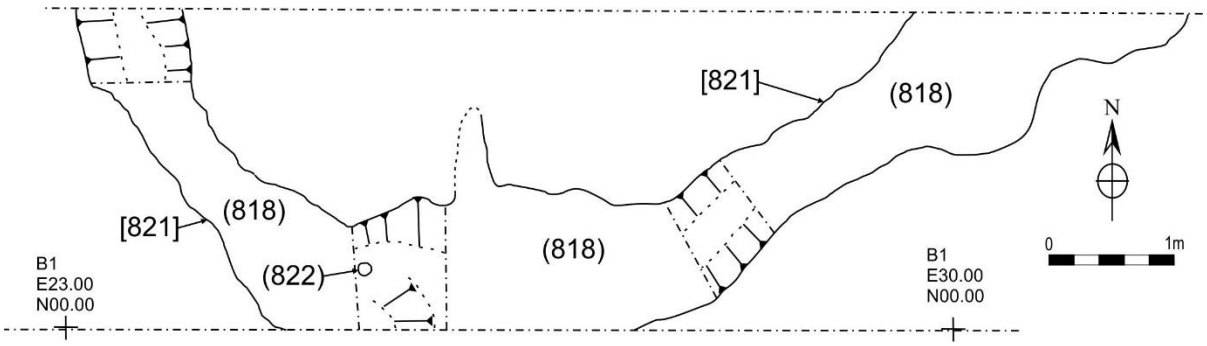

Figure 9: Post-excavation view of curvilinear feature [821/818)

Zone 8 Features – Central Group (Baseline 2 - Figure 7)

4.5.11 The central group consisted of five features, [**813/803**], (**804**), [**814**], [**816**] and [**819**].

4.5.12 [**813**] was a N-S orientated linear cut that extended beyond both the north and south sides of the trench. It measured 0.45m to 0.54m wide and had a maximum depth of 0.18m. [**813**] contained a single fill, (**803**), which was a sterile mid grey silty sand with occasional sub-angular stone inclusions. The consistent nature of this fill suggests it is likely the result of a

period of silting up, which together with [**813**]'s linear shape might indicate that this represents a small drainage channel that was left open and allowed to silt up naturally.

4.5.13 Approximately 9m to the east of [**813**] was a shallow sub-oval deposit, (**804**), the southern extent of which continued beyond the southern edge of the pipe trench. Its maximum depth was 0.13m and it consisted of a very sterile mid-grey sand, possibly representing an area of trample.

4.5.14 Context (**804**) sealed a pit [**814**], a sub-oval steep-sided cut feature whose southern part also extends beyond the southern extent of the pipe trench (Plate 6). This pit had a maximum depth of 0.26m and contained a single fill, (**815**), which was a moderately compact mid to dark grey brown silty sand. (**815**) contained some fragments of burnt bone (**SF036**) and one sherd of prehistoric pottery **SF035**.

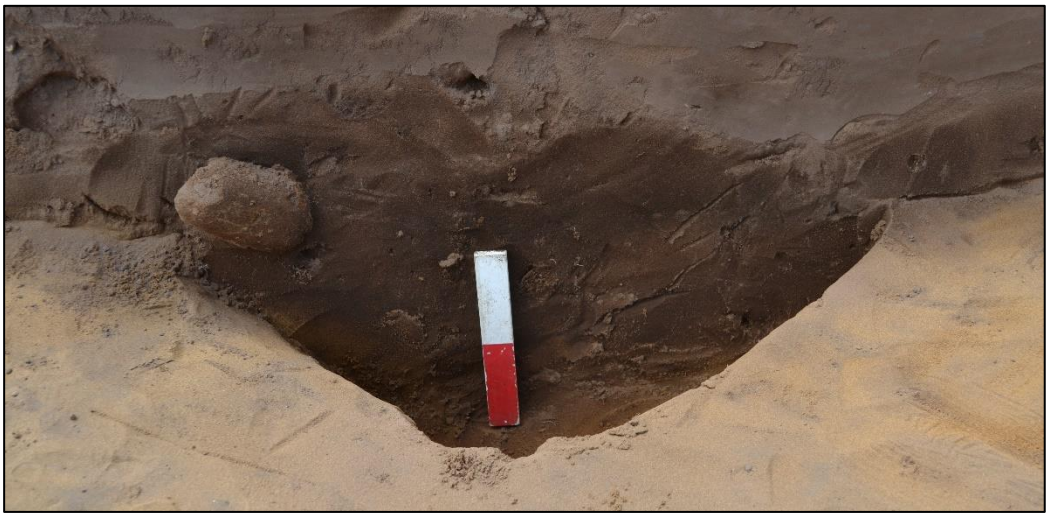

Plate 6: North facing section of [814/815)

4.5.15 [**819**] was an irregular oval cut pit (Figure 10) located c.1.5m north-west of the east side of deposit (**804**) (Figure 7). [**819**] had steep sides leading down to a generally flat base and its north side extended beyond the north edge of the trench. This pit had three fills, (**805**), (**827**) and (**828**), though primary red fill (**827**) was interpreted as having perhaps been caused by the post-depositional percolation of water through upper fills (**828**) and (**805**). (**805**) and (**827**) were the upper fills, and may be contemporary, part of the same event, as it appears that both fills were mixed, difficult to tell apart and are the result of deliberate backfilling of cut [**819**].

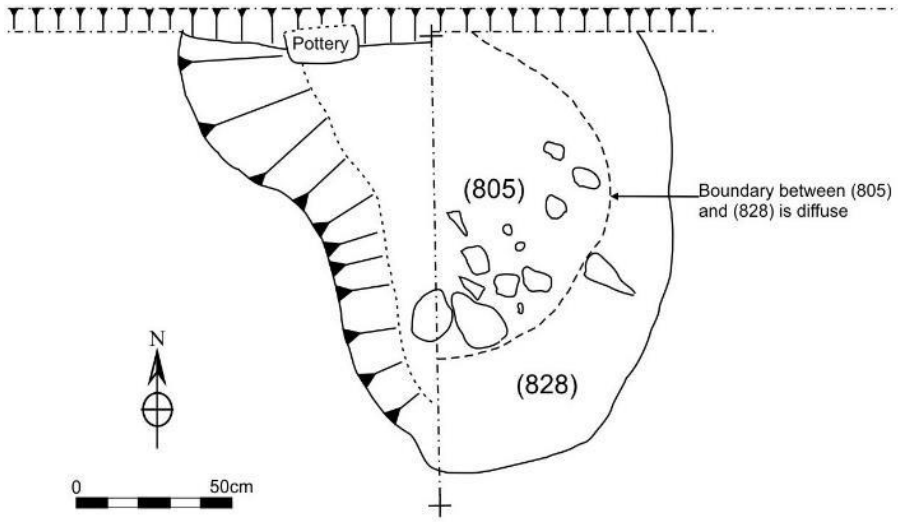

Figure 10: Plan of pit [819] and artefact-rich fills

4.5.16 (**805**) consisted of a dark grey to black silty sand and contained frequent fire-cracked stone inclusions of various sizes and numerous sherds of prehistoric pottery (see Plate 7), some of which were very finely decorated. Nine pieces of worked flint were also found within this fill. Only very small fragments of charcoal were noted within this pit, perhaps suggesting that charcoal was recovered and reused until thoroughly burnt. It seems probable that upper fills (**805**) and (**828**) comprised the by-products of one or several burning events, consisting of soot, ash and fire-cracked stone, perhaps relating to cooking processes given the large amount of pottery also found in the fills and that pit [**819**] may have been dug specifically for their deposition, as there was no definite evidence for *in situ* burning within the cut or nearby.

Plate 7: View of artefacts in pit [819]

Plate 8: East-facing section of pit [819]

4.5.17 [**816**] was a small, negatively cut feature c.3m east of the western side of [**805**] (Figure 7 and Figure 11). It was an irregular oval shape in plan, orientated approximately WNW-ESE and had very steep sides, particularly at its ESE end where it was noticeably deeper than elsewhere, with a concave base and a maximum depth of 0.25m (Plate 9). [**816**] contained a single fill, (**806**), which consisted of a dark brown-grey silty sand of medium compaction and appears to form the result of a period of silting up, suggesting cut [**816**] was left open. Two pieces of worked flint and two possibly worked quartz flakes were recovered from the fill, suggesting a prehistoric date.

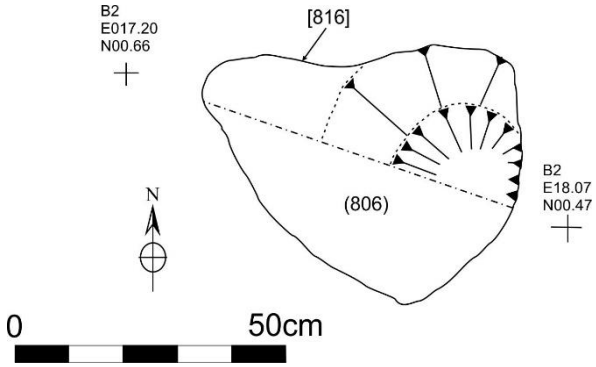

Figure 11: Post-excavation plan of [816/806)

Plate 9: SW facing section of [816/806)

4.5.18 The function of [**816**/**806**) is uncertain but it may represent a posthole, with the post situated at the deeper ESE end and subsequently removed towards the WNW, creating the more disturbed and irregular shape of the cut on this side.

Zone 8 Features – Eastern Group (Baseline 3 - Figure 8)

4.5.19 The eastern group of features located in Zone 8 (Figure 8) consisted of [**817**], [**824**], [**825**], [**832**], (**810**), (**811**), [**829**] and [**831**].

4.5.20 [**817**] was an irregularly shaped cut orientated ESE-WNW, with the WNW end abutting and extending beyond the northern side of the trench. Its sides and base were irregular and shallow, with a maximum depth of 0.18m, and may not in fact represent a cut but rather a shallow depression into which the fill has been deposited.

4.5.21 [**817**] contained a single fill, (**807**), which was a dark grey to mid brown-grey silty sand of medium compaction. The darker part of the fill was situated at the NW extent of this fill and it graded gradually to the lighter brown colour towards the south and east, perhaps indicating that this deposit was the remains of a fire or burnt material, trampled and spread out towards the south and east.

Plate 10: Post-excavation view of [824/808) (right) and [825/826) (left)

Plate 11: view of shallow burnt pit [831/812)

4.5.22 [**824**] was a narrow curvilinear feature (Plate 10) with an approximate WSW-ENE orientation, situated c.3.5m east of [**817**]. It had sides that were generally regular, leading down to a slightly pointed base, and the ENE terminus was present within the limits of excavation, whilst its WSW end extended beyond the southern baulk.

4.5.23 [**824**] contained a single, slightly mixed fill (**808**), a mottled mid grey silty sand of medium compaction that contained numerous fragments of mussel shell throughout, though concentrated particularly in the fill's upper reaches, and occasional fragments of animal bone, some of which appear burnt. The function of this feature was unclear, though the curvilinear shape and the regularity of the sides indicate it may have been used as a drainage ditch, whilst the mixed character of the fill together with the midden debris indicate (**808**) was the result of deliberate backfilling.

4.5.24 Just north of [**824**] lay [**825**], a small irregularly shaped pit (Plate 10). The cut was an irregular elongated oval shape in plan, orientated approximately E-W, with variable sides, the southern side being much steeper than the northern. [**825**] contained a single fill, (**826**), a very sterile moderately compact mid grey-brown silty sand. The function and date of this pit is uncertain.

4.5.25 [**832**] was a shallow, "kidney-shaped" cut c.1.5m east of the ENE terminus of [**824**] (Figure 8). The sides were variable in gradient though fairly regular and led down to a concave base. Despite its shallow depth (maximum 0.14m) it was felt that this cut was regular enough to be considered artificial, and was perhaps truncated (as may be the case for all of the features described here) by later ploughing activity. It contained a single fill, (**809**), which was a moderately compact mid brown-grey silty sand with occasional small pebble inclusions, but was otherwise sterile and homogenous. Some possibly worked quartz and stone flakes **SF029** were found in this fill, suggesting a possible prehistoric date, but the function of this feature remains uncertain.

Plate 12: **General view of site, facing north-west**

4.5.26 (**810**) was a shallow, irregular deposit located c.14m east of the western edge of [**832**]. (**810**) consisted of a spread of mid grey to black silty sand, likely the remnants of soot and ashy material, and contained frequent fire-cracked stone inclusions. The edges were rather diffuse and indistinct, and the southern edge extended beyond the southern edge of the pipe trench. (**810**) appears to be the result of the deposition and spread of burnt material, though it is unclear where this material would have originated as there was no sign of *in situ* burning in the immediate vicinity.

4.5.27 (**810**) appeared to seal a small and very shallow (depth:0.06m) circular pit, [**829**] (Plate 13). This pit contained a single well compacted dark grey to black fill, (**830**) and its function is uncertain, though its circularity might suggest it represents the remains of a heavily truncated posthole.

Plate 13: **South facing section of (810) with [829/830) in the foreground**

4.5.28 Approximately 13m east of (**810**) lay (**811**), a very shallow (<0.05m) sub-oval shaped deposit, whose north edge extended beyond the northern edge of the trench. (**811**) consisted of a moderately compact mid grey sandy silt with occasional small sub-angular to sub-rounded stone inclusions. It may represent another area where the remains of human activity were trampled into the soft natural subsoil as no cut was readily apparent. A single sherd of prehistoric ceramic **SF028** was recovered from this deposit.

4.5.29 [**831**] was a narrow elongated "lozenge-shaped" cut (see Plate 11) situated 1.2m east of (**811**). It had a maximum depth of 0.12m and had variable sides, with an undulating base. Despite the variability of its sides, this feature was considered likely to represent an artificially cut feature as opposed to a silted-up natural depression. [**831**] contained a single fill, (**812**), a moderate to firm mottled dark grey-black to light grey sand and ash. Some fragments of prehistoric pottery **SF027** were recovered from the fill, and it was felt that some of the natural subsoil into which the feature was cut had been heat-affected, suggesting this cut may have been used as a hearth.

4.6 Zone 10

4.6.1 Zone 10 was located east of Zone 8 and the Zone 9 road crossing and ran WNW-ESE just south of the A91, in the field to the east of the Edenside to Strathkinness road (Figure 5). Its ESE boundary is formed by the road crossing at Zone 11, where the pipeline route crosses the track leading from the A91 to Easter Kincaple Farm.

4.6.2 Topsoil stripping of Zone 10 was monitored on 6th June 2016. However, the contractors failed to notify ARCHAS and unfortunately excavation continued unmonitored for several days thereafter. As much of the topsoil strip had been conducted without monitoring, the excavation of the pipe trench was also monitored from 14th to 18th July 2016. During the excavation of the pipe trench, a rough well-compacted clinker and brick fragment surface (**1002**) was noted (see Figure 12).

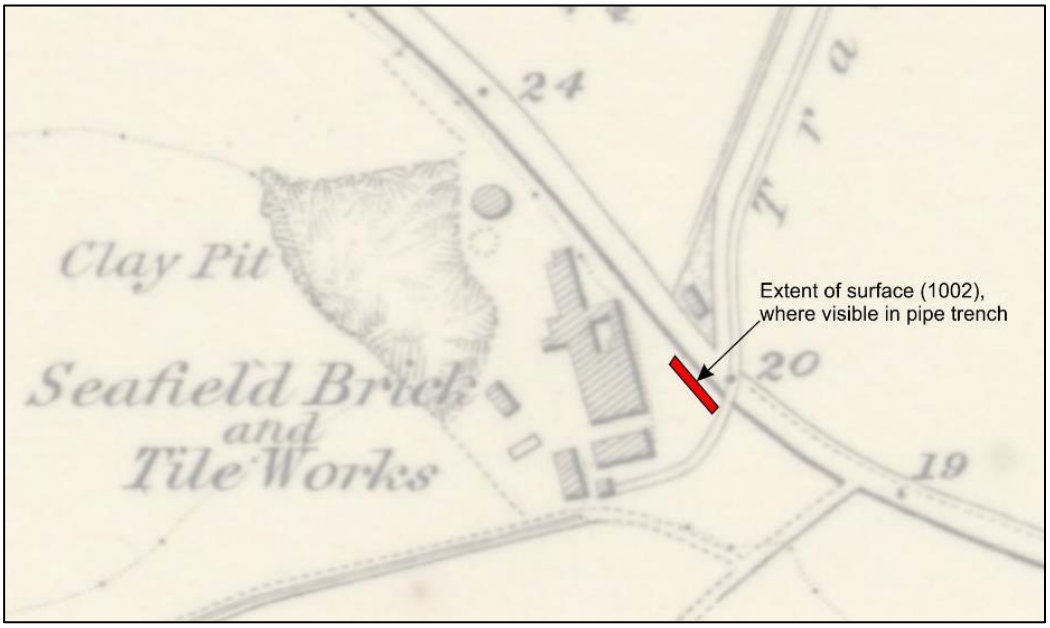

Figure 12: extent of surface (1002), plotted against 1854 Ordnance Survey map. ARCHAS after NLS

4.6.3 Topsoil in Zone 10 consisted of a dark brown-grey silty loam and varied in thickness from 0-0.60m BGL at the WNW end to 0-0.30m BGL at the ESE. This variation in topsoil thickness is likely due to the character of the local topography.

4.6.4 The sub soil consisted of sand and clay deposits. No structural features relating to the 19th century Seafield Brickworks were observed, but numerous brick and tile fragments were noted throughout the topsoil towards the ESE end of Zone 10, where the brickworks is thought to have been located.

4.6.5 During the excavation of the pipe trench, A rough well-compacted surface (**1002**) was noted (see Plate 14 and Plate 15), composed of ceramic brick, tile and pipe fragments mixed with clinker, c. 0.08m thick, underlying the topsoil, which was approximately 0.35m in thickness at

this point. This overlay (**1003**), a layer of made ground formed of brick fragments and clinker, which overlay a 0.30m thick deposit of mid red-brown silty clay overlying light brown-yellow sand subsoil. (**1002**) extended c.24m WNW – ESE along the route of the pipe trench, with its ESE extent located just west of a NNE-SSW farm track. The ESE extent of (**1002**) appeared heavily disturbed. No walls or structural elements other than this surface were noted in the presumed vicinity of the brickworks, and no evidence for the tramlines was observed.

Plate 14: Surface (1002) post cleaning

Plate 15:NE-facing section of (1002) and associated deposits

4.7 Zone 12

4.7.1 Zone 12 ran WSW-ESE just south of the A91, in the field to the east of Zones 10 and 11 (Figure 13). Its eastern boundary is delineated by a modern hedge boundary that separates this Zone from Zone 13. Topsoil stripping of Zone 12 was monitored on 14th May 2016 and 17th June 2016.

4.7.2 The topsoil here consisted of a dark brown-grey sandy loam from 0-0.40m BGL, overlying subsoil that varied from a loose light brown-yellow sand to a mid red, brown silty clay. No archaeological deposits were noted in Zone 12.

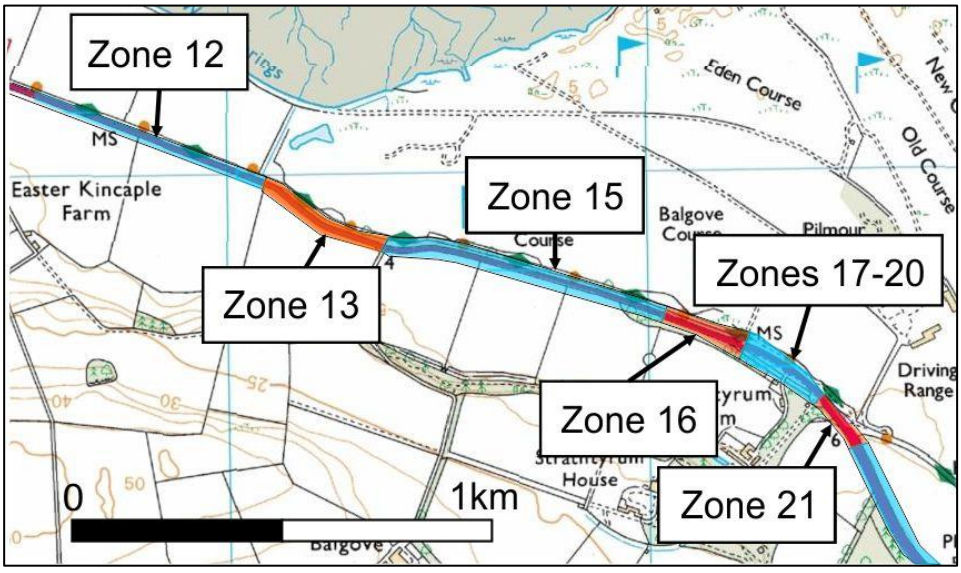

Figure 13: Locations of Zones discussed in the text. ARCHAS Ltd after Ordnance Survey. Reproduced by permission of the Ordnance Survey. Crown Copyrights. All rights reserved.

4.8 Zone 13

4.8.1 Zone 13 was located east of Zone 12 and ran WNW-ENE just south of the A91, with its eastern boundary formed by the road crossing at Zone 14, where the route of the pipeline crosses a small farm track that heads south off the A91 (Figure 13). Topsoil stripping to subsoil was monitored here on 14th May, 25th May and 26th May 2016.

4.8.2 The topsoil in Zone 13 consisted of a dark brown-grey sandy loam from 0-0.40m BGL, overlying subsoil that varied from a loose light brown-yellow sand to a mid, red-brown silty clay, very similar to that found in Zone 12. No archaeological features were noted in Zone 12.

4.9 Zone 15

4.9.1 Zone 15 was located south of the A91 to the east of the road crossing at Zone 14 and ran WNW-ESE to its eastern boundary, which consisted of a rough farm track that lead SSW from the main road (Figure 13). Topsoil stripping of Zone 15 was monitored over three days between 14th May 2016 to 26th May 2016.

4.9.2 The topsoil here consisted of a dark brown-grey sandy loam from 0-0.35m BGL. The underlying subsoil mostly comprised a mottled light brown-yellow sand with occasional small sub-rounded stone inclusions. There were also very occasional patches of clay, but the subsoil consisted predominantly of sand deposits. Several ploughmarks were visible cut into the sandy subsoil and no archaeological deposits were noted.

4.10 Zone 16

4.10.1 Zone 16 was located south of the A91 to the east of Zone 15 and ran WNW-ESE from the eastern end of Zone 15 following the line of a rough farm track (Figure 13). Stripping in Zone 6 was monitored over 3 days during 21st May 2016 to 23rd May 2016.

4.10.2 The groundbreaking works revealed moderately compact dark brown silty loam topsoil from 0-0.40m BGL overlying a subsoil consisting of light orange- yellow sand (Plate 16). No archaeological deposits were noted.

Plate 16: Working shot of Zone 16 topsoil strip

4.11 Zones 17-21

4.11.1 Zones 17-21 were located south of the A91 to the east of Zone 16 and ran WNW-ESE to just past the turnoff for the road to the Old Course Hotel, where the course of the pipeline crossed the road at Zone 22 (Figure 13).

4.11.2 Zones 19-22 revealed deep tarmac road surfaces below built up tarmac road surfaces and were only visited occasionally along with three trial holes that were inspected on 6th January 2016. During this inspection only dark brown sandy loam topsoil was noted to 0.30m BGL, the maximum depth reached.

4.12 Zone 23

4.12.1 Zone 23 was located north of the A91 in the playing field south of the Old Course Country Club and ran NNW-SSE at its easternmost extent following the line the A91 and curving to a E-W orientation at its westernmost extent, where it crossed the road at Zone 24. Stripping in Zone 6 was monitored over 2 days during 31st March 2016 to 1st April 2016.

4.12.2 The groundbreaking works revealed moderately compact mid to dark grey-brown sandy loam topsoil from 0-0.35m BGL overlying a subsoil consisting of mottled fine light yellow sand. Frequent ploughmarks were observed cut into the sandy subsoil.

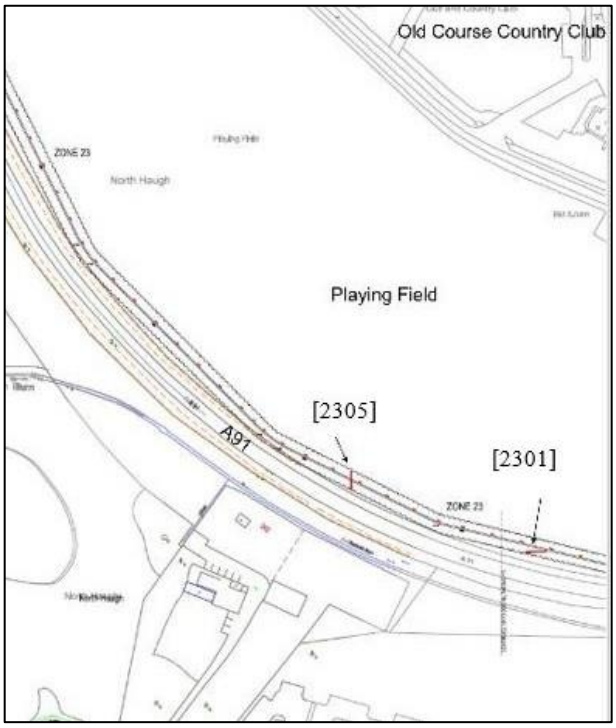

Figure 14: Location of linears [2301] and [2305] (after Vital Energi)

Plate 17: view of linear [2305/2306), facing north

4.12.3 Two archaeological features were noted in this zone – [**2301**] and [**2305**] (see Figure 14).

4.12.4 [**2301**] was a E-W orientated linear cut, 1.01m wide and 0.22m deep, with a concave base and curved sides. It contained a single fill, (**2302**), a mid, grey-brown silty sand of moderate compaction with occasional small stone inclusions.

4.12.5 [**2305**] was a N-S linear cut, 0.61m wide and 0.20m deep with a concave base and curved sides, that extended across the strip for a maximum length of 11m (Plate 17). It contained a single fill, (**2306**), a mid, grey-brown silty sand of moderate compaction. Post-medieval ceramic sherds were recovered from this fill.

4.13 Zone 25

4.13.1 Zone 25 was situated just south of the road crossing at Zone 24, and ran N-S to the east of the Gateway Building (Figure 5). It was monitored over 5 days from the 13th April 2016 to 12th May 2016. Both the initial topsoil strip and the excavation of the pipe trench were monitored, as this zone was located in an area in which two graves had been found in a previous evaluation (Canmore ID: 157812).

4.13.2 The groundbreaking works revealed dark grey-brown loamy topsoil (**2501**) to a maximum depth of 0.30m BGL, overlying a mid to light brownish pink deposit (**2502**) consisting of rounded to sub-angular stones. This deposit varied in thickness from 0.20m to 0.95m and the stones appeared to have been laid down in a stratified manner (Plate 18). This, together with the absence of any anthropogenic remains found in this deposit, suggest it may have been the result of water-borne deposition in a fast-moving environment.

Plate 18: View of deposit (2502), showing stratification.

4.13.3 It is possible that this deposit represents the result of deposition from the prehistoric Storegga Slide tsunami, though it is hard to be certain. (**2502**) becomes thinner as it proceeds south, and is less than 0.20m thick at the southern extent of Zone 25, where it meets the road that leads past the campus. (**2502**) deposit overlay the natural subsoil (**2504**), which was found to comprise a light mottled brown-yellow silty sand. There were occasional patches of a dark brown loamy sand deposit (**2503**) with a thickness of <0.08m. It is possible that this represents a buried soil.

4.13.4 It should be noted that no deposit similar to (**2502**) was observed in Zone 23, just north of Zone 25, but it is likely that Zone 25 was levelled in recent times as it is currently used as a playing field and the current ground level is significantly lower.

4.14 Zones 26-39

4.14.1 Zones 26-39 were monitored by intermittent inspection, as they lay within the University campus and the David Russel Apartments and initial monitoring showed that most of these zones lay within areas that had been heavily disturbed by the construction of the University buildings and the David Russel Apartments student accommodation.

4.14.2 The stratigraphy within these zones generally consisted of dark brown silty loam topsoil and turf (of varying thicknesses, with maximum thickness recorded being 0.42m, though generally far thinner, averaging 0.20-0.25m where recorded) overlying made ground deposits (see Plate 19 and Plate 20). Occasional natural subsoil was reached, and where visible consisted of light brown-yellow silty sand with patches of silty clay, particularly on higher ground. No archaeological features or deposits were noted within any of these zones.

Plate 19: view of pipe trench in Zone 27

Plate 20: view of pipe trench in Zone 31

4.14.2 The deposits around the David Russell Apartments was found to consist almost entirely of modern made ground that extended to deeper than the level of the development's impact, and was therefore left unmonitored after some initial inspections.

5 Summary and Discussion

5.1 General

5.1.1 Clearly the most interesting archaeological deposits encountered are the series of prehistoric features at the eastern end of Zone 8. With the exception of the yard surface in Zone 10, all other archaeological features noted are likely to represent the remains of post-medieval agricultural usage of the land. A notable exception is the deposit in Zone 25 that was interpreted as the evidence of a cataclysmic tsunami event and as such is of more geological than archaeological significance.

5.2 Zone 8

5.2.1 The archaeological features in Zone 8 were generally rather ephemeral, with very diffuse edges and none having been cut into the subsoil to a depth greater than 0.30m.

5.2.2 The shallow nature of these features may indicate that they were truncated sometime after their initial creation and use, most likely by ploughing and tilling of the land. Alternatively, these features may have been dug to such shallow depths due to the difficulties in excavating to any great depth into such a soft, fine sandy subsoil.

5.2.3 The soft sand made excavation awkward, as evidenced by the issues Vital Energi encountered when digging pipe trenches along the route of the development. Similar difficulties were faced by the archaeological team when investigating the deposits at Zone 8, and several of the features excavated may have been overcut out of necessity.

5.2.4 Such soft sand would obviously have been very easy to disturb. It is likely that many of the shallowest deposits at Zone 8 were created as the result of trampling topsoil into the subsoil during everyday activities. Such deposits include (**804**), (**810**), (**811**) and (**820**).

5.2.5 Of these, deposit (**820**) is particularly notable due to its extent – over 19m from east to west. The base of this deposit was very irregular, perhaps suggesting (**820**) was formed as the result of animal activity creating a large trampled area.

5.2.6 [**813**] and [**824**], the linear features in Zone 8 may represent drainage ditches as they appear too small to be boundary or defensive ditches. Despite being situated on a slight rise, the ground where all groups of Zone 8 features are situated is generally flat, and so may have required drainage if people were active in the area for any significant period of time.

5.2.7 Several darker, charcoal-rich features were investigated in Zone 8 – [**819**] and [**831**] in the main groups near the eastern end of the zone, and [**801**], an outlier several hundred metres to the west. It must be noted here that its spatial removal from the main groups of features means that it is difficult to relate [**801**] to the main body of archaeological deposits, though it is aesthetically very similar and has a similar fire-cracked stone and charcoal composition.

5.2.8 Of these darker features, only one, [**831**], was considered to exhibit possible signs of *in situ* burning, and even this was far from certain. It is therefore impossible to say with any certainty if any of the features investigated were hearths, but all of these darker features seem to contain the by-products of one or several burning events and may relate to food preparation on a sizeable scale.

5.2.9 [**819**] is worthy of special mention here. As well as having a dark fill (**805**) that would indicate the presence of charcoal and ash, and numerous fire-cracked stones, the fill also contained numerous sherds of early Prehistoric pottery primarily grooved ware along with four large

pieces of worked flint. Some of the pottery was very finely decorated (Plate 17) and appears to represent the remains of at least three vessels (Macsween, A. *pers comm*). The number of artefacts recovered from this pit dwarfs that recovered from the entirety of the rest of the site and the presence of several pieces of flint and chert (Plate 22 and Plate 23), a rare and prized material in the area, suggests that the intention behind their deposition may have gone beyond the purely functional.

Plate 21: Finely decorated pottery from pit [819]

Plate 22: Detailed View of lithics SF010

Plate 23: Detailed view of lithics SF030

5.2.10 Overall, it is hard to determine the original function of the series of features found at the eastern end of Zone 8. No obvious buildings or structures were noted and though possible postholes were investigated, these appear to be isolated and enigmatic not forming any discernible structure. Interpretation is hampered by the fact that the site comprises a 2.50m wide strip through what may have been a far larger activity area, and it is likely that significant archaeological deposits survive outwith the path of the pipe trench, to the north and south of the features investigated.

5.3 Zone 10

5.3.1 Zone 10 was monitored as it was believed to run through or near the site of the 19th century brick and tileworks.

5.3.2 In the event, neither any wall foundations relating to the buildings visible in the cartography nor remains relating to the tramlines that are shown leading north from the brickworks were revealed during either the topsoil strip or the excavation of the pipe trench.

5.3.3 The topsoil was full of ceramic brick, tile and pipe fragments, suggesting that any buildings that had existed had been demolished and ploughed over. During excavation of the pipe trench a well compacted, though rather rough surface was revealed (**1002**). It seems likely that this surface represents an exterior yard or work area, as it was not bounded by any wall foundations or post holes, and its edges were vague and ill-defined.

5.4 Zone 23

5.4.1 Two linear ditches were investigated and recorded during the monitoring of Zone 23, [**2501**] and [**2505**].

5.4.2 Both appear to be very similar in size and profile, and may therefore be similar in function. They appear different to the field drains noted in the area, which were almost entirely steep-sided and rubble-filled. Post-medieval pottery **SF040** was recovered from (**2506**), the fill of [**2505**].

5.4.3 Though slightly furrow-shaped, these shallow linear ditches are far more well-defined than other furrows and ploughmarks noted along the extent of the development, and likely represent post-medieval boundary or drainage ditches. Their shallow depths suggest they have been heavily truncated, perhaps during the creation of the modern playing fields under which they lie.

6 Conclusions and Recommendations

6.1 General

6.1.1 The archaeological monitoring of the district heating pipeline and associated works from Guardbridge to St Andrews showed most of the route within the towns and University areas to have been heavily landscaped and disturbed in the modern period.

6.1.2 Where the route of the pipeline crosses greenfield areas between the towns, the majority of the development area was shown to contain little or no archaeological remains other than drainage systems and ploughmarks that likely relate to post-medieval agricultural usage of the land. It would seem that any structural parts of the former Seafield Brickworks, should they remain, lie outwith the impact of the development.

6.2 Zone 8 – Prehistoric Remains

General

6.2.1 The most archaeologically significant deposits discovered were the prehistoric features located at the eastern end of Zone 8. Though interpretation of the site has proven difficult given the necessarily partial nature of the investigation, it is clear that significant levels of human activity took place here, with the burnt nature of several of the deposits and the large volume of pottery recovered from pit [**819**] suggesting food preparation and occupation on a sizeable scale.

Ceramic

6.2.2 Preliminary assessment of the ceramic assemblage[5] has suggested a Late Neolithic (Grooved Ware) date for the pottery recovered from pit [**819**] in particular. It is possible that all the features in the vicinity date from this period, but more analysis is required to gain a greater understanding of the site and its phasing.

6.2.3 It is recommended the pottery be examined in detail by a recognised ceramic specialist, likely to be ARCHAS' preferred early ceramic specialist, Ann MacSween. The resulting report from this work will be produced to publication standard. This analysis will determine the likely date of the assemblage, any interesting or notable features, and the minimum number of vessels present. It is anticipated that the assessment will also recommend any sherds which would merit from illustration.

6.2.4 Once the number of vessels has been established, these will be described in detail (fabric surface finish, decoration, condition) and a summary by context will be provided.

6.2.5 After a likely date for the assemblage has been established, the pottery will be discussed in the context of what is known about this period in the region as well as more widely.

Lithics

6.2.6 A total of 20 lithics were recovered from the excavations and monitoring, primarily from Zone 8.

6.2.7 Preliminary assessment of the lithics has indicated that these support the Middle to Late Neolithic date provided from the preliminary assessment of the ceramic. The flint artefacts

[5] Ann MacSween, *pers comm*.

(including a scraper and a knife) recovered from (**805**) in particular, are of the highest quality and merit further research into their function and the origin of the raw material. The lithics were submitted to ARCHAS' preferred lithic specialist Dr Torben Bjarke Ballin who indicated his thoughts and potential research goals for the assemblage.[6]

6.2.8 It is recommended the pottery be examined in detail by a recognised lithic specialist, likely to be ARCHAS' preferred lithic specialist, Dr Torben Bjarke Ballin of Lithic Research. The resulting report from this work will be produced to publication standard. This analysis will determine the likely date of the assemblage, any interesting or notable features, as well as providing recommendations for any future work and which artefacts will require illustration for publication.

Soil Samples

6.2.9 A total of 18 soil samples were collected during the investigation of features in Zone 8. It is recommended these samples be submitted for flotation and analysis.

6.2.10 The material (or flots) recovered during this process will be analysed to recover artefacts and ecofacts, provide further information about the nature of the deposit and identify any samples suitable for radiocarbon dating.

Bone

6.2.11 A limited quantity of bone was discovered during excavations of Zone 8 (**SF021**, **SF033** and **SF036**). Assessment by osteoarchaeologist David Henderson confirmed this to be faunal material and that the assemblage required no further specialist investigation.[7]

Illustration

6.2.12 It is likely that the specialist assessment of the ceramic and lithic assemblages will identify artefacts which would merit detailed illustration. It is anticipated that the recommendations of the specialists will be undertaken as part of the post-excavation process.

6.2.13 It is anticipated that any illustrations required will be completed by our recommended illustration partner, Alice Watterson of 'Alice Watterson Archaeological Visualisation'.

Radiocarbon Dates

6.2.14 While it is not possible to quantify the number of radiocarbon dates which will be required at this stage, it is anticipated that two to three radiocarbon dates will be sought as part of the post-excavation process. This will be determined by the results of the specialist analyses of the ceramic sherds, but more importantly the soil samples.

6.2.15 It is anticipated that dateable material will be submitted to the Scottish Universities Environmental Research Centre (SUERC) for assessment and processing.

6.3 Dissemination

6.3.1 The archaeological watching brief along the route of the proposed development between Guardbridge and St Andrews revealed significant archaeological features and artefacts which merit further study.

[6] Dr Torben Bjarke Ballin *pers. comm.*
[7] David Henderson *pers. comm.*

6.3.2 A number of recommendations have been made for specialist analysis of the artefacts and the results of the excavation. It is anticipated that these recommendations will be pursued and the results of the detailed and comprehensive specialist analysis will be presented along with a discussion of the excavation in an established academic publication or peer reviewed journal. Such publication will also present the findings of the excavation to a wider audience, allowing a more detailed interpretation of the results to be achieved.

6.3.3 ARCHAS Cultural Heritage Ltd have already been in discussions about presenting the results of the project at the Tayside and Fife Archaeological Conference in November 2016. The Journal of the Society would also provide a suitable peer reviewed outlet for the publication of the results.

6.4 Conclusions

6.4.1 While the overwhelming majority of the pipeline route was shown to be archaeologically sterile, the density and varied nature of the features discovered around Kincaple indicates an extensive and previously unrecorded area of Prehistoric occupation.

6.4.2 The excavation area was only a corridor 2.50m wide, but features were recorded over a large area. In addition, many of the features recorded were shown to run under both the north and south baulks, demonstrating the remains to be more extensive than those recorded in the excavation.

6.4.3 The specialist analyses and further research recommended in this DSR will provide further information with regard to the dating, chronology and use of the site.

6.4.4 While ARCHAS Cultural Heritage Ltd can provide recommendations as to the necessity of any further post-excavation work, the final decision as to what is required to satisfy the planning condition rests with Fife Council Archaeology Unit.

Acknowledgements

ARCHAS Cultural Heritage would like to thank Vital Energi for commissioning us to undertake the project as well as for their assistance and understanding. Their company and good humour were gratefully received.

Thanks go to the various specialists, Alice Watterson, Ann MacSween, Dave Henderson and Dr Torben Bjarke Ballin for providing ARCHAS with their time and thoughts as to what would be required from the assemblage.

We would also like to thank Fife Council Archaeology Unit (contacts Douglas Speirs and Steve Liscoe) for their assistance in planning and undertaking the project.

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Appendix A Context Register

Context No.	Trench	Type	Description	Dimension	Comments	Date	Initial
801	Zone 8	Cut	Approximately N-S linear (only part visible in across trench) with irregular sides c. 15 - 20° and a flattish base.	L(length): >2.50m (trench width), W(width): 5.60m D(depth): 0.21m	Shallow cut containing (802). May not be a true cut as sides were not steep and were very irregular.	30/05/16	JD
802	Zone 8	Fill	Moderately compact dark grey sandy silt with frequent sub-angular stone inclusions, many of which appear to be fire-crazed	L: >2.50m (trench width), W: 5.60m D: 0.21m	Deposit in possible cut [801]. High proportion of fire-crazed stones suggest detritus from potboilers or the remains of a burnt mound.	30/05/16	JD
803	Zone 8	Fill	Moderately compact mid grey silty sand with occasional sub-rounded stone inclusions.	L:>2.50m (trench width), W:0.53m D:0.18m	Fill of linear cut [813]. Consistent character of the fill suggests the cut was left open and silted up naturally.	02/06/16	JD
804	Zone 8	Deposit	Fairly loose mid grey sand with no apparent inclusions	L:2.56m, W:1.40m, D:0.12m	Very sterile deposit with very diffuse edges - may represent an activity area trampled into the soft sand natural. Appears to seal pit [814].	02/06/16	JD
805	Zone 8	Fill	Moderately compact black silty sand with frequent fire-crazed stones and occasional small charcoal flecks	L: >1.26m, W: 1.10m, D: 0.19m	Upper fill of Cut [819], overlay fill (827) within the cut. This fill contained numerous sherds of prehistoric pottery and four pieces of worked flint.Likely to represent the byproducts of as fire though not an actual hearth as there was no obvious evidence for *in situ* burning.	02/06/16	AR
806	Zone 8	Fill	Fairly well compacted dark brown-grey silty sand	L: 0.64m, W: 0.49m, D: 0.21m	Fill of cut [816]. Appears to represent natural silting up of the cut. Two flints and two quartz flakes recovered from this fill.	02/06/16	JD

Context No.	Trench	Type	Description	Dimension	Comments	Date	Initial
807	Zone 8	Fill	Moderately compacted silty sand, dark grey to black at NE grading to Mid brown grey towards the SW with very occasional small pebbles.	L:>3.20m, W: 1.60m D: 0.18m	Fill of possible cut [817]. Charcoal more concentrated at the NE end, suggesting this may be the remains of a fire trampled from here, although no definite signs of *in situ* burning. A single flint was recovered from this deposit.	04/06/16	JD
808	Zone 8	Fill	Fairly well compacted mottled and mixed mid grey sandy silt with occasional pebbles.	L:>4.72m, W: 0.64m, D: 0.23m	Fill of linear cut [824]. Fill contains numerous mussel shell fragments, particularly towards the top and occasional animal bone fragments.	04/06/16	JD
809	Zone 8	Fill	Moderately compact mixed mid brown-grey silty sand with occasional small stones and occasional charcoal flecks	L:2.28m, W: 1.18m, D: 0.14m	Fill of cut [832]. Mixed character of the fill suggests it is the result of deliberate backfilling or trample as opposed to silting up.	06/06/16	JD
810	Zone 8	Deposit	Fairly loose mid grey to black silty sand with a moderate amount of fire-crazed stone inclusions. Deposit is irregular in plan with an approximate NNW-SSE orientation.	L:>2.20m, W: 2.05m, D: 0.13m	Spread of burnt material and ash possibly the remnants of a fire burnt to the S of the trench, as the deposit was darkest towards its southern extent, spread and trampled into the soft sand subsoil.	06/06/16	JD
811	Zone 8	Deposit	Moderately compact mid grey sandy silt with occasional sub-angular stone inclusions. Deposit is irregular oval in plan, orientated approximately N-S, with the N iuhwlend extending beyond the trench.	L:>1.20m, W: 0.96m, D: 0.05m	Very shallow deposit, possibly represents an area of trampled subsoil in the soft sand natural.	06/06/16	JD
812	Zone 8	Fill	Moderate to firm mottled dark grey to black sand and ash with a moderate amount of fire-crazed stone inclusions and very occasional charcoal flecks.	L: 2.23m, W: 0.74m, D: 0.12m	Fill of possible fire pit [831]. Edges reasonably clear but a little diffuse in places due to heat-affected nature of the surrounding natural.	06/06/16	RC

Context No.	Trench	Type	Description	Dimension	Comments	Date	Initial
813	Zone 8	Cut	N-S linear cut with generally regular c.60 - 80° sides (E side steeper than W) and a slightly concave base	L:>2.50m (trench width), W:0.53m D:0.18m	Cut of shallow linear (possibly truncated by later ploughing). Contains fill (803). May represent a drainage channel.	02/06/16	JD
814	Zone 8	Cut	Possible sub-oval in plan (though S side extends beyond limits of trench). Sides of cut are steep, c.80-90° at top becoming shallower as they meet a generally concave base.	L: 0.69m, W: 0.26m, D: 0.26m	Cut of small pit containing fill (815). Function uncertain. Fill (815) appears to be sealed by deposit (804).	02/06/16	JD
815	Zone 8	Fill	Moderately compact mid to dark grey-brown silty sand.	L: 0.69m, W: 0.26m, D: 0.26m	Fill of [814]. Contained burnt bone fragments and one sherd of prehistoric pottery. Appears to be sealed by deposit (804) as was not visible until (804) was removed.	02/06/16	JD
816	Zone 8	Cut	Irregular oval cut with approximate ESE-WNW orientation with sides c.30 - 90° (ESE side very steep, others had a shallower gradient and were more irregular) and a concave base.	L: 0.64m, W: 0.49m, D: 0.21m	This cut may represent an irregular pit or a disturbed posthole, with the post removed and the cut subsequently silting up.	02/06/16	JD
817	Zone 8	Cut	Irregular cut with gradual though variable breaks in slope and irregular 10-30° sides and a slightly pointed base at the deepest part.	L:>3.20m, W: 1.60m D: 0.18m	The irregularity of the sides and base suggest may not actually represent a true cut, but rather fill (807) being a trampled deposit.	03/06/16	JD
818	Zone 8	Fill	Moderate to firm mid brown silty sand with very occasional charcoal flecks.	L: c.8.00m, W: <1.05m, D: 0.08-0.14m	Fill of curvilinear cut [821]. Appears mostly homogenous and the result of silting-up and likely sealed posthole [822].	03/06/16	RC

Context No.	Trench	Type	Description	Dimension	Comments	Date	Initial
819	Zone 8	Cut	Irregular oval cut with variable sides with slopes of c.30-50° leading down to a flat base.	L: 1.60m, W: 1.30m, D: 0.22m	Cut containing fills (828) and (805). May represent a fire pit, though it is uncertain whether *in situ* burning was present - alternatively it could a pit where burning and cooking detritus was deposited.	06/06/16	AR
820	Zone 8	Deposit	Fairly well compacted mottled and mixed light grey to black silty sand with c. 5% fire-crazed stones and very occasional charcoal flecks. Impossible to discern the shape in plan of this deposit as it was very large and extended beyond the northern baulk. sides and base are very irregular and diffuse.	L19.55m, W: >2.10m, D: 0.06-0.27m	Irregular spread of dark material likely at least partly the remnants of burning events trampled and spread into the ground. Mixed character of this deposit suggests it is not the result of natural silting up and diffuse sides with a very shallow gradient indicate it was not the fill of a cut. One flint was recovered from this deposit.	03/06/16	JD
821	Zone 8	Cut	Curvilinear cut with very gradual and undulating sides and a roughly concave base. Orientation is NW-SE, then W-E then SW-NE.	L: c.8.00m, W: <1.05m, D: 0.08-0.14m	Curvilinear feature of unknown function. Very shallow, but appears to be a definite cut so may have been truncated by ploughing. Contained fill (818).	04/06/16	RC
822	Zone 8	Feature	Feature has near-vertical sides and a pointed base, with a mid to dark brown firm sand fill.	L: 0.17m, W: 0.14m, D: 0.15m	Tapering base and vertical sides suggest this was a posthole or large stakehole, hence only a single context number allocated as would represent a post being driven into the ground as opposed to cut and subsequent fill. It was felt during excavation that this feature was sealed by [821]/(818) but the exact relationship was uncertain.	04/06/16	RC

Context No.	Trench	Type	Description	Dimension	Comments	Date	Initial
823	Zone 8	Feature	Feature has near-vertical sides and a concave base, with a mid to dark grey moderately compact sand fill.	Diameter: 0.24m Depth: 0.19m	Regularity and steepness of sides suggest that this was a posthole, hence only a single context number allocated (see above). This feature appeared to be sealed by deposit (820), though the exact relationship between the two was uncertain.	03/06/16	JD
824	Zone 8	Cut	Curvilinear cut with sharp breaks of slope, regular sides c.40° steep down to a slightly pointed base. Cut is orientated approximately ESE-WNW.	L:>4.72m, W: 0.64m, D: 0.23m	Cut of shallow ditch, possibly truncated by later ploughing. Function uncertain, though may represent a drainage ditch. Fill (808) is rather mixed and full of shell fragments, suggesting the cut was intentionally backfilled.	04/06/16	JD
825	Zone 8	Cut	Irregular elongated oval shape in plan, with variable sides, NNW side c. 40°, SSE side c.90°, and a slightly pointed base set towards the cut's S side. Cut is orientated approximately E-W.	L: 1.40m, W: 0.46m, D: 0.25m	Cut of irregularly shaped pit. Rather irregular, but it's depth and proximity to other features suggested it was artificial, though with an uncertain function. Contained fill (826).	04/06/16	JD
826	Zone 8	Fill	Moderately compact mid grey-brown silty sand very sterile.	L: 1.40m, W: 0.46m, D: 0.25m	Fill of cut [826]	04/06/16	JD
827	Zone 8	Fill	Well compacted mid orange silty and ashy sand that appeared to underlie 805) and (828) in cut [819].	L: c.0.50m, W: c.0.40m, D: 0.04m	Primary fill of cut [819]. This was felt to represent the post-depositional process of material percolated from the overlying fills into the base of the cut and causing discolouration as opposed to a separate event.	06/06/16	AR

Context No.	Trench	Type	Description	Dimension	Comments	Date	Initial
828	Zone 8	Fill	Firmly compacted dark grey sand and ash, with a moderate amount of fire-crazed stones inclusions.	L: 1.60m, W: 1.30m, D: 0.22m	Fill of [819]. This fill was very difficult to distinguish from (805), which it appeared to underlie within the cut, but was felt to be different enough to separate. It is likely that both were part of the same depositional event.	06/06/16	AR
829	Zone 8	Cut	Sub-circular very shallow cut, with regular sides c. 50° and a concave base.	Diameter: 0.25m, Depth: 0.06m	Likely to represent a very small pit or posthole. Its shallow depth suggests it was truncated. It appeared to be sealed by deposit (810), as it was not visible until the removal of (810). Contains fill (830)	06/06/16	JD
830	Zone 8	Fill	Well compacted dark grey to black silty sand.	Diameter: 0.25m, Depth: 0.06m	Very well compacted fill of cut [829]. The fill appears to consist of ashy or burnt material.	06/06/16	JD
831	Zone 8	Cut	Irregular "lozenge-shape" in plan with variable sides c.45-55° down to an undulating base. Cut is orientated approximately NE-SW	L: 2.23m, W: 0.74m, D: 0.12m	Shallow linear cut representing a possible fire pit. Natural subsoil appears heat-affected leading to diffuse edges of cut and suggesting possible *in situ* burning.	06/06/16	RC
832	Zone 8	Cut	Irregular "kidney-shaped" cut with variable sides with slopes of c.20-50° down to a concave base and an approximate NW-SE orientation.	L:2.28m, W: 1.18m, D: 0.14m	Cut is very shallow but appears regular enough to have been artificial. Contains fill (809).	06/06/16	JD

Context No.	Trench	Type	Description	Dimension	Comments	Date	Initial
833	Zone 8	Deposit	Moderately compacted grey-brown sandy loam with very occasional small sub-angular to sub-rounded stones	L, W: across site, D: 0.80-0.90m	Topsoil. This is the result of ploughsoil and may also have been built up slightly during the construction of the A91 just to the north of the strip, causing it's notable depth. It is significantly deeper near the western end of Zone 8 (away from the prehistoric site), where it has a thickness of up to c.1.50m - this is likely due to soil creep as this part of the strip is situated at the bottom of a steep slope though it may also be partially the result of artificial raising of the ground to prevent flooding.	06/06/16	JD
834	Zone 8	Deposit	Loosely compacted mottled mid to light orange yellow sand, very fine and soft with occasional sub-angular to sub-rounded stone inclusions.	L, W: across site, D: > 0.80-0.90m	Natural subsoil	06/06/16	JD
2301	Zone 23	Cut	E-W linear cut, with concave base and gently curved sides	L: >10.9m, W: 1.01m, D: 0.22m	Cut of shallow linear ditch	31/03/16	JD
2302	Zone 23	Fill	Mid greyish brown silty sand of moderate compaction.	L: >10.9m, W: 1.01m, D: 0.22m	Fill of [2301]	31/03/16	JD
2305	Zone 23	Cut	N-S linear cut with concave base and shallow, curving sides	L: >10m, W: 0.61m, D: 0.20m	Cut of shallow linear ditch	31/03/16	JD
2306	Zone 23	Fill	Mid greyish brown silty sand of moderate compaction.	L: >10m, W: 0.61m, D: 0.20m	Fill of [2305]	31/03/16	JD
2501	Zone 25	Deposit	Dark greyish brown sandy loam	L, W: Across site, D: 0.30m	Topsoil.	11/05/16	JD

Context No.	Trench	Type	Description	Dimension	Comments	Date	Initial
2502	Zone 25	Deposit	Mid brownish pink deposit consisting of angular to sub-rounded stones of various sizes.	L, W: Across site, D: 0.20-0.85m	Deposit of stones. Appears stratified so may be the result of natural waterborne deposition on a powerful scale. This deposit is unlikely to be made ground due to stratification and lack of anthropogenic remains. Underlies (2501).	11/05/16	JD
2503	Zone 25	Deposit	Dark brown loamy sand of moderate compaction	L,W: patchy, D: <0.08m	May represent a buried soil underlying (2502)	11/05/06	JD
2504	Zone 25	Deposit	Light brown-yellow sand, rather soft.	L,W: across site, D:>0.40m	Natural subsoil	11/05/06	JD

Appendix B Photographic Register

CD available on request.

Appendix C Drawing Register

Dwg No.	Type	Scale	Sheet	Description	Date	Drawn by
1	Section	01:10	1	E-facing section of linear [2301]	31/03/2016	JD
2	Section	01:10	1	N-facing section of linear [2305]	31/03/2016	JD
3	Section	01:10	2	N-facing part-section of [801]	30/05/2016	JD
4	Plan	01:50	2	Location plan of [801]	30/05/2016	JD
5	Section	01:10	3	S-facing section of [813], south slot	02/06/2016	JD
6	Plan	01:20	3	Post-ex plan of [813]	02/06/2016	JD
7	Section	01:10	3	N-facing section of (804) and [814]	02/06/2016	JD
8	Plan	01:20	3	Post-ex plan of (804), [814]	02/06/2016	JD
9	Section	01:10	4	NNW-facing section of [816]	02/06/2016	JD
10	Plan	01:20	4	Post-ex plan of [816]	02/06/2016	JD
11	Section	01:10	4	NW-facing section of [817]	02/06/2016	JD
12	Plan	01:20	4	Post-ex plan of [817]	02/06/2016	JD
13	Plan	01:50	5	Post-ex plan of [821], (822)	03/06/2016	RC
14	Plan	01:50	5	Post-ex plan of (820), (823)	03/06/2016	JD
15	Section	01:10	2	WNW-facing section of ploughmark in zone 15	17/05/2016	JD
16	Plan	01:50	2	Location plan of ploughmarks in zone 15	17/05/2016	JD
19	Section	01:10	6	W-facing section of [819]	04/06/2016	AR
20	Plan	01:20	6	1/2-ex plan of [819]	04/06/2016	AR
21	Section	01:10	7	ENE-facing section [824]	04/06/2016	JD
22	Plan	01:20	7	Post-ex plan of [824]	04/06/2016	JD
23	Section	01:10	7	WSW-facing section of [825]	04/06/2016	JD
24	Section	01:10	6	S-facing section of [819] after full excavation (along trench edge)	04/06/2016	AR
25	Section	01:10	8	S-facing section of burnt deposit (810)	06/06/2016	JD
26	Plan	01:20	8	Post-ex plan of (810)	06/06/2016	JD
27	Section	01:10	6	SW-facing section of [831]	06/06/2016	RC
28	Plan	01:20	9	Post-ex pan of (831)	06/06/2016	RC
29	Plan	01:20	8	Post-ex plan of (811)	06/06/2016	JD
30	Plan	01:20	9	Post-ex plan of [832]	06/06/2016	JD
31	Plan	01:10	9	S-facing section of [819]	06/06/2016	AR

Appendix D Finds Register

Finds No.	Context No.	Quantity	Material	Description	Comments	Date	Initials
010	805	4	Flint	4 separate flakes		03/06/2016	AR
011	820	1	Quartz	Small struck quartz flake		03/06/2016	JD
012	820	1	Flint	Flint flake?		03/06/2016	JD
013	818	1	Ceramic	Small ceramic fragment		03/06/2016	RC
014	805	1	Ceramic	Spherical fired clay (?) object		03/06/2016	AR
015	805	2	Ceramic	2 large sherds of prehistoric pottery		03/06/2016	AR
016	805	4	Ceramic	4 large sherds of prehistoric pottery		03/06/2016	AR
017	805	4	Ceramic	4 medium sherds of prehistoric pottery		03/06/2016	AR
018	805	29	Ceramic	29 small sherds and fragments of prehistoric pottery		03/06/2016	AR
019	805	1	Stone	1 coarse stone flake (?)		03/06/2016	AR
020	805	2	Ceramic	2 adjoining sherds		03/06/2016	AR
021	808	4	Bone	4 fragments of bone		04/06/2016	JD
022	805	1	Flint	1 flint flake, found in S-facing section		04/06/2016	AR
023	805	1	Ceramic	1 prehistoric pottery sherd from S-facing section		04/06/2016	AR
024	805	11	Ceramic	11 sherds recovered from section		04/06/2016	AR
025	805	6	Ceramic	6 sherds recovered from section		06/06/2016	AR
026	Surface of natural	1	Quartz	1 struck quartz flake		06/06/2016	AR
027	812	numerous	Ceramic	Several fragments of prehistoric pottery		06/06/2016	RC
028	811	1	Ceramic	1 prehistoric pot fragment		06/06/2016	JD
029	809	3	Stone	Possibly worked quartz and stone		06/06/2016	JD
030	805	4	Flint	1 flake and 3 possible scrapers		02/06/2016	AR

Finds No.	Context No.	Quantity	Material	Description	Comments	Date	Initials
031	806	2	Flint	1 flake and 1 possible scraper		02/06/2016	JD
032	806	2	Quartz	2 quartz flakes		02/06/2016	JD
033	803	6	Bone	6 fragments of burnt bone		02/06/2016	AR
034	807	1	Flint	1 possible piercer		02/06/2016	JD
035	815	1	Ceramic	1 small prehistoric pot sherd		02/06/2016	JD
036	815	7	Bone	7 fragments of burnt bone		02/06/2016	JD
037	805	33	Ceramic	33 sherds and fragments of prehistoric pottery		02/06/2016	AR
038	805	5	Ceramic	5 sherds from 2 vessels		02/06/2016	AR
039	805	5	Stone	5 possibly worked stone objects		02/06/2016	AR
040	2506	1	Ceramic	1 piece of post-medieval ceramic		31/03/2016	JD

Appendix E Sample Register

Sample No.	Context No.	Type	Quantity	Description	Comments	Date	Initials
1	2302		1 small bag	Mid grey brown silty sand, fill of linear [2501]		31/03/2016	JD
2	2306		1 small bag	Mid grey brown silty sand, fill of linear [2505]		31/03/2016	JD
3	2503		1 small bag	Dark deposit (possible buried soil) underlying possible Storegga Slide deposit (2502)		11/05/2016	JD
4	802		1 medium bag			02/06/2016	JD
5	803		1 large bag			02/06/2016	AR
6	806		1 medium bag			02/06/2016	JD
7	805		4 large bags	Dark artefact-rich deposit in [819]		02/06/2016	AR
8	807		1 large bag			02/06/2016	JD
9	818		2 medium bags			03/06/2016	RC
10	820		2 medium bags			03/06/2016	JD
11	808		1 large bag	Fill of [824] - contains shell fragments		04/06/2016	JD
12	808		1 small bag	Mussel shell sample		04/06/2016	JD
13	827		1 medium bag	Compacted orange deposit at base of [819]		04/06/2016	AR
14	810		1 large bag	Dark burnt deposit		04/06/2016	JD
15	827		1 medium bag	Orange compact silty sand material		06/06/2016	AR
16	830		1 small bag	V. compact dark fill of [829]		06/06/2016	JD
17	811		1 v. small bag	Charcoal sample from (811)		06/06/2016	JD
18	812		1 large bag	Charcoal-rich sample, fill of [831]		06/06/2016	RC

Appendix F Provisional Discovery and Excavation Scotland Entry

LOCAL AUTHORITY:	Fife Council
PROJECT TITLE/SITE NAME:	Guardbridge to St Andrews Renewable energy and district heating
PROJECT CODE:	213
PARISH:	St Andrews
NAME OF CONTRIBUTOR:	Joe Doran
NAME OF ORGANISATION:	ARCHAS Cultural Heritage Ltd
TYPE(S) OF PROJECT:	Archaeological Monitoring
NMRS NO(S):	-
SITE/MONUMENT TYPE(S):	Prehistoric features, post medieval agricultural features
SIGNIFICANT FINDS:	Lithics and ceramics
NGR (2 letters, 8 or 10 figures)	NO 61210 07806
START DATE (this season)	14/10/15
END DATE (this season)	12/08/16
PREVIOUS WORK (incl. *DES* ref.)	None
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	ARCHAS Cultural Heritage Ltd were commissioned by Vital Energi to undertake archaeological monitoring during ground breaking works associated with the construction of a Renewable Energy Centre, biomass fuel storage and processing as well as the installation of a district heating pipeline between Guardbridge and St Andrews in Fife. The watching brief followed the placement of a planning condition upon the proposed development by Fife Council and Fife Council Archaeology Unit as the route of the pipeline and associated works were identified by Fife Council and Fife Council Archaeology Unit as having archaeological potential. During the watching brief significant archaeological remains were encountered which preliminary assessment has dated to the Early Neolithic and a small number of features relating to post-medieval land use. A rough yard surface was also revealed and is likely to relate to the Seafield Brick and Tile Works. These remains were investigated and recorded as they lay within the route of the pipeline and were unable to be preserved in situ.
PROPOSED FUTURE WORK:	None
CAPTION(S) FOR ILLUSTRS:	-
SPONSOR OR FUNDING BODY:	Vital Energi
ADDRESS OF MAIN CONTRIBUTOR:	ARCHAS Cultural Heritage Ltd Suite B2 Laws Close 339-343 High Street Kirkcaldy KY1 1JN
EMAIL ADDRESS:	Jo.doran@archas.co.uk & admin@archas.co.uk
ARCHIVE LOCATION	NMRS and Fife Council Archaeology Unit (intended)