

## 13.0 ARCHAEOLOGY AND CULTURAL HERITAGE

### Introduction

- 13.1 This chapter of the ES assesses the likely significant effect of the Proposed Development in terms of archaeology and cultural heritage. It is supported by **Appendix 13.1** and **Appendix 13.2**.
- 13.2 The chapter describes: the assessment methodology; the baseline conditions existing at the Assessment Site and surroundings; the likely significant environmental effects; the mitigation measures required to prevent, reduce or offset any significant adverse effects; and the likely residual effects after these measures have been employed. This chapter has been prepared by Archaeological Project Services.

### Legislation and Planning Policy Context

#### Legislation

- 13.3 Scheduled Monuments are protected by the Ancient Monuments and Archaeological Areas Act of 1979 (HMSO 1979) (Ref. 13.1).
- 13.4 Under the terms of Part I Section 2 of the Ancient Monument and Archaeological Areas Act 1979 it is an offence to damage, disturb or alter a Scheduled Monument either above or below ground without first obtaining permission (Scheduled Monument Consent) from the Secretary of State. This Act does not allow for the protection of the Setting of Scheduled Monuments.
- 13.5 Significant historic buildings are 'listed' and protected by the Planning (Listed Buildings and Conservation Areas) Act of 1990 (HMSO 1990) (Ref. 13.2). Section 66 of the Act states that the planning authority must give special regard for the desirability of preserving (*inter alia*) the setting of any Listed Building that may be affected by the grant of planning permission. Section 72 states that special attention shall be paid to the desirability of preserving or enhancing the character or appearance of Conservation Areas.

## National Planning Policy

*National Planning Policy Framework (Ref. 13.3)*

- 13.6 National policy guidance relating to the historic environment has been set out in National Planning Policy Framework (NPPF). NPPF states that:

***“Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.”***

- 13.7 A desk-based assessment of the well site has been prepared (**Appendix 13.1**) and evaluation would normally be undertaken by geophysical survey, trial trenching, or a combination of both, in order to establish the layout and extent, nature, function, date, state of preservation, and significance of any archaeological remains present. The present conditions at the well site render most techniques of geophysical survey inappropriate, although ground-probing radar could potentially be used. Elsewhere on the pipeline route magnetometer survey would be the most appropriate technique of geophysical investigation. Additionally, NPPF advises that:

***“Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset)”, and “They should take this assessment into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset’s conservation and any aspect of the proposal.”*** (DCLG 2012).

## Local Planning Policy

*North York Moors National Park Authority Adopted Core Strategy and Development Policies (2008) (Ref. 13.4)*

- 13.8 The Assessment Site is partly situated within the administrative area of North York Moors National Park Authority (NYMNP) and partly within Ryedale District.
- 13.9 The NYMNP Adopted Core Strategy and Development Plan Policies (2008) within the Local Development Framework embodies the national legislation and planning guidance. Within the Core Strategy and Development Plan Policies the core policy (Core Policy G) for protecting and enhancing cultural and historic assets states that:

*“The landscape, historic assets and cultural heritage of the North York Moors will be conserved and enhanced.” and “Particular protection will be given to those elements which contribute to the character and setting of: 1. Conservation Areas; 2. Listed Buildings; 3. Historic Parks and Gardens; 4. Scheduled Monuments and other sites of archaeological interest” (NYMNP 2008).*

13.10 This core policy is elaborated by the following development policies:

***“Development Policy 7 – Archaeological Assets***

*Proposals for development that would have an unacceptable impact on the integrity or setting of a Scheduled Monument, or other sites or remains considered to be of national archaeological importance will not be permitted.*

*In the cases of sites or remains of regional or local importance, development proposals will only be permitted where the archaeological interest is capable of being preserved in situ. Where this is not justifiable or feasible, permission will only be granted where provision is made for appropriate preservation by record. In all cases, an appropriate assessment and evaluation will be required to be submitted as part of the planning application in areas of known or potential archaeological interest.” (NYMNP 2008)*

*Ryedale Local Plan, March 2002 (Ref. 13.5)*

13.11 The Ryedale Local Plan (2002) embodies the national legislation and planning guidance. Within the plan the policies for the historic environment have objectives including:

- 2. “To protect and ensure the continued preservation of the District’s buildings of architectural and historic importance;*
- 3. To preserve and enhance the District’s Historic Parks and Gardens;*
- 4. To protect and ensure the continued preservation of important archaeological sites.”*

13.12 These objectives are elaborated in the following policies:

***“Policy C13 – Archaeological investigation of sites***

*Where development proposals affects sites of lesser or potential archaeological importance, the District Council may request desk-top assessment or field evaluation as part of a planning application, to provide adequate assessment of the nature, extent, and importance of the remains present and the degree to which the development is likely to affect them. Where physical preservation in situ within development proposals is not possible or justified, the District Council in granting planning permission will require the implementation of a*

*programme of archaeological investigation, recording and publication as part of the development scheme."*

***"Policy C14 – Ancient Monuments and archaeological sites***

*The District Council will seek to ensure that Ancient Monuments and other important archaeological sites are protected by exercising a presumption in favour of:-*

*(i) The physical preservation of nationally important archaeological remains and their settings, whether scheduled or not, and against development adversely affecting such sites.*

*(ii) The physical preservation of archaeological remains in situ within development proposals for other important sites."*

***"Policy C15 – Historic parks and gardens***

*The District Council will not grant permission for any development which would have a material adverse effect on either the character or setting of an Historic Park or Garden (Ryedale District Council 2002)(Ref. 13.5)."*

*The Ryedale Plan – Local Plan Strategy May 2012 (Submission Document) (Ref. 13.6)*

13.13 The Ryedale Plan will be the new Local Plan for the district. It will (*inter alia*) guide development as well as protecting key Ryedale assets such as environmental and historic assets.

13.14 Policy SP12 Heritage states that:

*"Distinctive elements of Ryedale's historic environment will be conserved and where appropriate, enhanced. The potential of heritage assets to contribute towards to the economy, tourism, education and community identity will be exploited including (inter alia):*

- The nationally significant prehistoric archaeological landscapes of the Yorkshire Wolds and the Vale of Pickering To assist in protecting the District's historic assets and features the Council will; (inter alia)*
- Work with partners and landowners to encourage sensitive land management in the Vale of Pickering and the Wolds"*

Additionally,

*"Designated historic assets and their settings, including Listed Buildings, Conservation Areas, Scheduled Ancient Monuments and Registered Parks and Gardens will be conserved and where appropriate, enhanced. Development proposals which would result in substantial harm to or total loss of the significance of a designated heritage asset or to the archaeological significance of the Vale of Pickering will be resisted unless wholly exceptional circumstances can be demonstrated. Proposals which would result in less substantial harm will only be agreed where the public benefit of the proposal is considered to outweigh the harm and the extent of harm to the asset.*

*In considering and negotiating development proposals, the Council will seek to protect other features of local historic value and interest throughout Ryedale."*

13.15 Policy SP13 Landscapes states that:

*"The quality, character and value of Ryedale's diverse landscapes will be protected and enhanced by; Encouraging new development and land management practises which reinforce the distinctive elements of landscape character within the District's broad landscape character areas;" Additionally, Development proposals should contribute to the protection and enhancement of distinctive elements of landscape character that are the result of historical and cultural influences, natural features and aesthetic qualities (Ryedale District Council 2012)(Ref. 13.6).*

#### Discussion

13.16 The legislation and planning policies both confer protection on the physical remains and setting of designated remains, that is, scheduled monuments and listed buildings. National policy guidance advises that the significance of heritage assets, in terms of both their physical remains and setting, should be identified and assessed in relation to development proposals. The local development framework reiterates these policies and extends the principal of physical protection to remains of regional or local importance, although where this is not feasible or justifiable permission may be granted subject to there being provision for appropriate preservation by record.

### Assessment Methodology

#### Study Area

13.17 The study area used within this assessment encompasses a zone within a 500m of the Ebberston Moor 'A' Well Site and pipeline route between the well site and Knapton Generating Station (KGS), a distance of approximately 15.3 km, shown on **Figures 13.1** and **13.2**.

#### Scope of the Assessment

13.18 The assessment identifies and describes known cultural heritage resources within the study area in terms of their relative importance. It also provides an assessment of the magnitude and significance of the effects of the Proposed Development on the cultural heritage resource which includes:

- Archaeological sites (above and below ground);
- Historic structures and Listed Buildings;
- Conservation Areas;
- Historic parks or gardens; and
- Historic landscapes.

#### Desk-Based Study

- 13.19 The initial desk-based study was carried out in accordance with the standards and guidance of the Institute for Archaeologists (IfA) (Ref. 13.7). A desk-based assessment is defined as:

*"as a programme of study of the historic environment within a specified area or site on land, the inter-tidal zone or underwater that addresses agreed research and/or conservation objectives. It consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely heritage assets, their interests and significance and the character of the study area, including appropriate consideration of the settings of heritage assets and, in England, the nature, extent and quality of the known or potential archaeological, historic, architectural and artistic interest"* (IfA 2011).

- 13.20 The desk-based assessment comprised a consultation of the North Yorkshire Historic Environment Record (HER), North York Moors National Park HER, accompanied by documentary and cartographic research undertaken at North Yorkshire County Record Office and libraries at Malton, Pickering and York Minster. A complete list of resources consulted as well as details and gazetteers of archaeological sites and other cultural heritage features within the study area are contained in the full desk-based assessment (**Appendix 13.1**).

#### Site Visit

- 13.21 The results of the desk-based research were supplemented by a site examination of accessible parts of the Assessment Site and study area, undertaken to assess current ground conditions and land-use patterns; to ascertain the presence of any surface finds of an archaeological character, and of features that might indicate the presence of archaeological remains; to identify the presence and proximity of historic buildings and structures; and to identify any historic landscape remains.

#### Assessment Criteria

- 13.22 The cultural heritage resource of any site may potentially be affected by development

through a variety of sources and to variable degrees. The principal effects include direct total or partial disturbance of archaeological features, both above and below ground; secondary disturbance through vibration, noise, dust or hydrological change to archaeological deposits, features or structures; severance of a cultural heritage feature from a group of closely associated features; and long-term deterioration of the physical setting of an archaeological feature or listed building.

13.23 Development works are most likely to impact cultural heritage features through direct disturbance of deposits during site preparation or construction or through secondary impacts resulting from the use of the site. Development may affect earthwork or buried archaeological remains where groundworks are undertaken but can provide an opportunity to enhance the understanding of archaeological remains through appropriate assessment and recording.

13.24 The significance of potential effects of development is assessed taking into account the sensitivity of the receptor (the importance of the archaeology or cultural heritage sites likely to be affected) and the magnitude of change upon the receptor (the level or degree of effect likely to be caused by the Proposed Development). A general scale of sensitivity (site importance), based on existing designations may be high, medium, low or negligible, summarised as follows:

- High: sites of national or international importance, Scheduled Monuments, Grade I and II\* Listed Buildings;
- Medium: sites of regional importance, registered sites, such as Parks and Gardens, Grade II Listed Buildings, Conservation Area;
- Low: locally important sites; and
- Negligible: sites of no significant value or interest.

13.25 Where the Assessment Site and Study Area have seen no, or only limited, archaeological survey the potential of the Assessment Site to contain undetected archaeological deposits will be uncertain.

13.26 Magnitude of change is based on the vulnerability of the receptor, its current condition and the likely nature of the effect of the Proposed Development. A general scale of change may be major, moderate, minor or negligible, summarised as follows:

- Major: Loss of the site or feature of national importance, or change resulting in loss or impairment of the resource and its historical context and setting;

- Moderate: Change to the site or feature resulting in loss or impairment of the resource and its historical context and setting;
- Minor: Loss of or change to a site of local importance; and
- Negligible: Loss of or damage to a feature of very low archaeological significance or minimal effect upon the setting of a feature of local archaeological importance.

13.27 Where the survival or extent of archaeological deposits is uncertain it is difficult to predict the magnitude of change with any certainty.

13.28 It should be noted that developments can also provide positive lasting effects by, for example, reuniting cultural heritage features through reducing land severance and improving public access, as well as enhancing local heritage and contributing to the understanding of the past through archaeological recording works.

### **Baseline Conditions**

#### *Archaeology*

13.29 There are Scheduled Monuments and non-designated archaeological sites within the study area shown in **Appendix 13.1**.

13.30 **Appendix 13.1** provides a detailed description of the historic development of the study area with reference to the following periods:

- Prehistoric (>500000BC – AD43);
- Roman (AD43 – AD410);
- Saxon – medieval (AD410 – AD1500);
- Post-medieval (AD1500 – AD1900); and
- Modern (20th century – present day).

13.31 Summaries of the results by period are detailed below.

#### *Prehistoric*

13.32 Numerous prehistoric sites and finds are located within the study area, ranging from isolated finds spots to earthwork remains. Several of the prehistoric sites are extant earthworks, in some cases Scheduled Monuments. Funerary monuments, in the form of cairns and round barrows, have been identified and are likely to be from the Bronze Age period. Some



concentrations of these funerary monuments form barrow cemeteries, in particular in the northern part of the study area, from the well site southward to the area around Warren House (approximately 1.5km north of the A170 road). A barrow (known as 'round barrow on Ebberston Low Moor, 200m north west of Ebberston Common House') (**Figure 13.2**, No. 83) is recorded approximately 50m east of the well site and was observed during a site visit. Just northwest of Warren House, within woodland, is a barrow earthwork ('round barrow 300m north west of Warren House') (**Figure 13.1**, No. 27). This is approximately 50m from the pipeline route and was observed during a site visit.

13.33 Linear boundary systems of probable Late Neolithic - Early Bronze Age date are located in the study area. These are in the form of embanked pit alignments. Such linear boundaries may have functioned as either large scale territorial or political boundaries or small scale economic or estate boundaries. Close to the buildings at Givendale Head Farm the pipeline route crosses several prehistoric linear alignments. Two of these are pit alignments that form parts of a Scheduled Monument ('three embanked pit alignments and segments of a linear boundary and a medieval hollow way, 300m west of Givendale Head Farm') (**Figure 13.2**, No. 103, 113), the other a dyke (**Figure 13.2**, No. 114). Further to the southwest, approximately 1km northeast of Warren House, the pipeline route crosses the alignment of another prehistoric linear boundary, 'Diggerfoot Dyke' (**Figure 13.1**, Nos. 24, 25; **Figure 13.2**, Nos. 116, 117). A complex of earthwork boundaries, protected as a Scheduled Monument (known as 'embanked pit alignments, linear earthworks, round barrows and cairns on Ebberston Low Moor'), is located c. 200m east of Ebberston Moor 'A' Well Site (**Figure 13.2**, Nos. 72-5, 77, 79, 80, 82, 85).

13.34 Prehistoric flints were observed thinly scattered along the pipeline route during the site visit. Slight concentrations of this material were noted at the southern end of the pipeline route, immediately west of KGS, and just north of Warren House in the central part of the pipeline route. These may define locations of prehistoric activity but could represent just transient human presences at the finds locations.

#### *Roman*

13.35 There is a general paucity of Roman artefacts or remains within the study area and no known Roman sites have been recorded previously in the centre and northern part of the study area. Interventions in the southern part of the study area, immediately west of KGS, have revealed Roman ditches (**Figure 13.1**, No. 50) and cropmarks identified in the vicinity of the ditches (short distances, up to 2km, to N, S and NW of KGS) have also been assigned a Roman to medieval date (**Figure 13.1**, Nos. 3, 4, 7, 8).

- 13.36 Two clusters of Roman artefacts were noted on the pipeline route during the site visit. One of these was in the southern part of the pipeline route, 0.5 km south of the River Derwent, and the other was in the centre, about 250m north of the A170 Wilton-Allerston highway. Both of these artefact concentrations probably represent areas of Romano-British rural settlement, perhaps farmsteads.
- 13.37 Geophysical surveys were undertaken at both of the aforementioned artefact concentrations. At the location south of the Derwent, a couple of pit-type magnetic anomalies were identified. A linear feature was also recorded and although this was ditch-like it is more likely to have a natural origin, and was immediately adjacent to other geological variations (see **Appendix 13.2**). At the second location, north of the A170 Wilton-Allerston road, geophysical anomalies probably representing a ditch and pits were recorded. The ditch alignment does not correspond with nearby field boundaries, suggesting it pre-dates the current field system (**Appendix 13.2**).

#### *Saxon*

- 13.38 No Saxon artefacts or remains have been identified in the study area, although documentary evidence indicates that the villages may have had their origins at this time.
- 13.39 One heritage resource, Jinglebee Cross, may be of Saxon date, though could be medieval or later. Although the exact location of Jinglebee Cross is not known it is believed to have been situated within the study area, probably near Jingleby Thorn, about 500m west of the well site (**Figure 13.2**, No. 106).

#### *Medieval*

- 13.40 Few heritage resources of medieval date have been identified in the study area. At the southern end of the pipeline route, close to KGS, medieval ditches, probably field boundaries or drains, have been recorded (**Figure 13.1**, No. 6). In the same general area, south of the River Derwent, other ditches and trackways, of uncertain date but considered to be Roman to medieval, have been identified (**Figure 13.1**, Nos. 3, 4, 7, 8).
- 13.41 The postulated location of a medieval grange and the hamlet of Loft Marishes is 1 km north of the Derwent on the eastern edge of the study area (**Figure 13.1**, Nos. 1, 2). A watermill of medieval origin is located on the eastern edge of the study area approximately 1 km north of Allerston village (**Figure 13.1**, No. 49).

- 13.42 In the northern part of the study area, at Givendale Head Farm, is a quarry and limekiln of medieval or (more probably) post-medieval date (**Figure 13.2**, No. 101).
- 13.43 Jenglebee Cross, believed to have been located in the study area near Jingleby Thorn, 500m west of the Assessment Site, was probably medieval in date but could have been Saxon or later (**Figure 13.2**, No. 106).
- 13.44 During the site visit, soilmarks indicating ploughed out ridge and furrow of probable medieval date were observed on the proposed pipeline route just south of the A170 Wilton-Allerston road. Additionally, earthworks of medieval ridge and furrow were noted directly adjacent to the pipeline route immediately north of the A170. These agricultural earthworks were observed to truncate an earlier, though undated, earthwork enclosure (**Appendix 13.1**).

#### *Post-medieval*

- 13.45 Quarries, in some cases associated with lime kilns, are recorded in the northern part of the study area, mostly near the well site (**Figure 13.2**, Nos. 76, 84, 86-8, 90-93, 120, 124-5, 134). Earthworks of possible quarries were also noted in the same area during the site visit. Other quarries and kilns are recorded a little to the south around Givendale Head Farm and southwards to Warren House (**Figure 13.2**, Nos. 101-2, 132, 139-140).
- 13.46 Enclosures and boundaries of post-medieval date have been identified in the northern part of the study area (**Figure 13.1**, No. 51; **Figure 13.2**, Nos. 115, 118, 121, 128).
- 13.47 Rabbit warrens are located in the northern part of the study area, between Givendale Head Farm and Warren House (**Figure 13.2**, Nos. 133, 135-7, 141). Earthworks of one such warren were noted near to Givendale Head during the site visit.
- 13.48 In the northern part of the study area, north of Givendale Head, is the site of a former farmhouse (**Figure 13.2**, No. 122). The remnants of this building were noted during the site visit.

#### *Modern*

- 13.49 No modern archaeological sites have been recorded in the study area.

### Built Heritage

- 13.50 Buildings and structures of post-medieval date are recorded at various locations along the route. North of Allerston is a watermill (**Figure 13.1**, No. 49), while further north, near Givendale Head, is a farmhouse (**Figure 13.2**, Nos. 97). Post-medieval buildings also occur at Eberston Common House, near the northern end of the study area, and were observed during the site visit. Some of the aforementioned buildings are shown on historic maps dating from the 1850s (see **Appendix 13.1**), but none of them are Listed Buildings.
- 13.51 Towards the south end of the study area is a milestone and Knapton Lodge (**Figure 13.1**, Nos. 41-2), both of post-medieval date. Both of these are Grade II Listed Buildings.

### Historic Landscape

- 13.52 The Assessment Site crosses two landscape character areas (as identified by Natural England). The northern half is in the North Yorkshire Moors and Cleveland Hills character area, while the southern half of the study area is in the Vale of Pickering. These are described in more detail in Chapter 8.
- 13.53 From the well site southwards to the A170 Wilton-Allerston road, the study area lies within the North Yorkshire Moors and Cleveland Hills Character Area. At its northern end the route mostly traverses mixed plantation woodland. Additionally, a few areas of unknown planned enclosure are crossed. Thereafter, heading southwards, the southern end of this section of the route where the land declines towards the A170, the historic landscape character is modern improved fields.
- 13.54 South of the A170 road to KGS, where the study area crosses the Vale of Pickering, the historic landscape character is largely an enclosed one. Specifically, large areas crossed by the pipeline route are modern improved fields, planned large scale parliamentary enclosure, and planned enclosure of unknown (though probably post-medieval) date.
- 13.55 The northern section of the study area, from the well site southwards to Warren House, is located within a historic landscape that exhibits three main periods of activity. These date to the prehistoric, post-medieval and modern periods (dates as in Section 13.30).

### *Prehistoric*

- 13.56 An extensive prehistoric landscape encompasses the northern half of the study area, from

the well site southwards to Warren House, and contains funerary remains (some of which are scheduled monuments) and linear boundaries (all of which are scheduled monuments). The funerary remains are of Bronze Age date and occur as cairns and round barrows with some of them in cemeteries. Linear boundaries, in the form of embanked pit alignments, are located within the study area and beyond, mostly to the east with several lying south and southeast of Givendale Head Farm. These linear features probably functioned as territorial or estate boundaries which mostly survive as earthworks.

#### *Post-medieval*

- 13.57 The post-medieval landscape that encompasses the Assessment Site is divided into two character areas. The northern part, from the well site southwards to Warren House, is within the modern woodland mixed plantation character area associated with the Dalby Forest. In this area are enclosures, field systems and stone quarries with associated lime kilns. The enclosures are of variable form, and some remain as fields while others have been covered by modern forestry. These enclosures are depicted on historic maps of the area (see **Appendix 13.1**). Field systems of more regular rectangular fields are recorded on mid 19<sup>th</sup> and early 20<sup>th</sup> century maps and are focussed on farmsteads at Ebberston Common House, at the northern limit of the study area close to the well site, and Givendale Head and Warren House, a little further south. The southern part of this northern section of the study area, from Warren House south to the A170 road, is modern improved fields, although historic maps suggest the field systems were probably established by parliamentary enclosure in the post-medieval period.

#### *Modern*

- 13.58 The modern landscape is one dominated by forestry plantation within Dalby Forest, with a large area (160ha) of agricultural fields located immediately east of the Assessment Site. The forestry is known to have impacted elements of the earlier historic landscapes (see **Appendix 13.1**), although prehistoric and post-medieval features survive within the modern landscape.

#### Historic Maps

- 13.59 Historic maps record the changing landscape of the study area since the early 19<sup>th</sup> century. Dating from 1810, the map of Allerston Manor only records the northern half of the study area. Most of the area traversed by the pipeline route was open common, although there were some regular rectangular fields near Warren House. At several locations near the

northern limit of the study area slight mounds are shown which may be barrows. The 1854 Ordnance Survey maps indicate the landscape was largely split into two zones. In the southern part of the study area, to the south of the A170 Wilton-Allerston road, the landscape is one of small rectangular fields. North of the road, to approximately Warren House, the area is also enclosed with mostly rectangular fields, although the fields tend to be larger than those to the south. Further north, to the limit of the Assessment Site around the well site, much of the study area was open moorland. The railway immediately north of KGS was already in existence. There were few changes to the landscape on the 1892 map, though by that time another east-west railway, just south of Allerston and Wilton villages, had been constructed. The 1913 map show little change since the 1850s. However, large blocks of woodland plantation had been established near Warren House and small blocks of woodland had been planted at the northern end of the study area, near Ebberston Common House. By 1952 the northern part of the study area, and much of the land to the west of Ebberston Common Road, had been planted with forest and this extended southwards to link with the plantations previously established near Warren House. South of Warren House, to KGS, the land was largely unchanged. This was largely maintained until 1977, although by that time the railway just south of Allerston and Wilton had been removed and the Lockton Compound adjacent to the northern end of the Assessment Site, had been constructed (see **Appendix 13.1**).

#### Site Visits

- 13.60 Site visits were undertaken on 14<sup>th</sup>-15<sup>th</sup> May, 25<sup>th</sup> May and 25<sup>th</sup> July 2013. At the north end of the study area are two adjacent compounds, the Lockton Compound on the north side and the Ebberston Moor 'A' Well Site to the south. Much of the Lockton Compound is recessed into the ground to a depth of approximately 1.3m. Similarly, the majority of the adjacent Ebberston Moor 'A' Well Site is recessed into the ground surface by approximately 1.5m. No archaeological remains were observed at either location during the site visit.
- 13.61 Close to Ebberston Common House, the pipeline route passes through pasture fields. There are numerous slight undulations in this pasture area. Historic maps depict quarrying in this general vicinity and a tree belt, now removed. The undulations could represent backfilled quarry hollows or the removal of trees and tree stumps. Further south close to where the pipeline route enters the Dalby Forest, earthworks were observed in a pasture field. These earthworks included an embanked platform, and embanked hollow, and ridge and furrow. Additionally, remains of a building were noted. Directly to the east of the pasture field, in another wooded area, were a probable quarry pit and earthwork banks, including one marking the parish boundary. South of this near Givendale Head, were a number of former quarry pits while further to the south west was an irregular mound identified as a former

rabbit warren. At the southern edge of the wooded plantation zone was a terrace and, slightly further north, the remnants of a stone wall. In addition in woodland plantation immediately north of Warren House a barrow mound and a length of stone wall was observed although there was virtually no bare earth for the observation of artefacts or soilmarks. Near the edge of the woodland isolated or small scatters of prehistoric flint were observed while immediately south of the woodland a scatter of burnt stone was also noted

- 13.62 In contrast the great majority of the southern half of the study area, extending from north of Warren House to the KGS, was ploughed and weathered arable land with excellent visibility for potential artefacts. In this part of the study area attention was paid for artefacts, soil marks and earthworks.
- 13.63 Immediately north of the A170 Wilton-Allerston road was an earthwork enclosure that was truncated by medieval ridge and furrow. Further earthworks of a pond and terrace were noted in the same area. Immediately to the northeast was a small scatter of Roman pottery. Just south of the A170 Wilton-Allerston road, soilmarks indicated the presents of ploughed out ridge and furrow. Within the flood plain of the River Derwent (defined by flood defence banks) were earthworks of probable stock watering hollows and feeder channels. A short distance south of the River Derwent another scatter of Roman pottery was identified, together with an isolated prehistoric flint. In addition a thin scatter of probable prehistoric flint waste flakes was observed immediately west of KGS, the scatter diminishing to the west.

#### Geophysical Survey

- 13.64 Subsequent to the site visits, and informed by them, areas along the pipeline route were selected to be subject to geophysical survey. The areas chosen were the pasture fields with undulations, located near Eberston Common House, and both scatters of Roman artefacts. The former area was additionally selected because of the proximity of prehistoric remains, including a barrow and linear earthwork.
- 13.65 Geophysical survey of the area of undulations near Eberston Common House was found to be compromised by intense magnetic disturbance caused by an existing pipeline. However, a few pit-type anomalies were recorded (see **Appendix 13.2**).
- 13.66 At the site of the Roman pottery scatter north of the A170 Wilton-Allerston road, the geophysical survey recorded a ditch and several pit-type anomalies. The ditch alignment varies from the present boundary pattern and probably pre-dates the current field system. Traces of ridge and furrow, parallel with the modern field boundaries, were also noted.

13.67 At the location of the second Roman pottery scatter south of the River Derwent, the geophysical survey did not identify any definite archaeological remains. A couple of pit-type magnetic anomalies were recorded, together with a linear feature. This latter feature probably has a geological origin, and is immediately adjacent to more diffuse geological anomalies.

#### Designated Sites/Remains

13.68 As noted above, various designated sites are located in the study area. Most of these are Scheduled Monuments, though there are also two Listed Buildings.

#### *Scheduled Monuments*

13.69 All of the Scheduled Monuments are of prehistoric date and comprise individual barrows (burial mounds), and cairns and barrow cemeteries (**Figure 13.1**, Nos. 27-8, 31-3, 35; **Figure 13.2** Nos. 73-5, 78, 81, 83, 89, 98, 109-112, 123, 126, 129-131), and various linear boundaries, in the form of embanked pit alignments and banks and ditches (**Figure 13.1**, Nos. 12-23, 53; **Figure 13.2**, Nos. 72, 77, 79-80, 82, 85, 100, 103, 105, 113, 128). These monuments are major characterisers of the prehistoric landscape that encompasses the northern part of the study area.

13.70 Two sections of one of the Scheduled Monuments are located on the route of the Proposed Development. These are both prehistoric pit alignments near Givendale Head Farm (**Figure 13.1**, No. 37; **Figure 13.2**, Nos. 103, 113). At these locations the Proposed Development will involve directional drilling or a suitable alternative installation technique to carry the pipeline approximately 2-3m below ground level beneath the Scheduled Monument. Therefore, the Proposed Development will have a negligible effect on this Scheduled Monument.

13.71 There are also several Scheduled Monuments within the study area, close to pipeline route. These include a barrow close to Warren House, in the northern part of the study area (**Figure 13.1**, No. 27). This particular Scheduled Monument is in woodland and is located 50m west of the pipeline route. There are also two individual barrows at the northern limit of the study area, located 75m to the southwest and 75m to the north of the Assessment Site (**Figure 13.2**, nos. 83 and 89, respectively). There is also a scheduled area comprising linear boundaries and barrows that is situated a minimum of 200m east of the well site. All of the scheduled monuments are of national significance. None of them will be physically impacted by the Proposed Development. However, the setting of the scheduled monuments will be



sensitive to impact from the Proposed Development. Additionally, the visual integrity of one of the barrows (No. 83 on **Fig. 13.2**) will be sensitive to impact from the Proposed Development, though this sensitivity will be low.

#### *Listed Buildings*

13.72 There are two Listed Buildings within the study area. Both of these are located towards the southern end of the pipeline route, to the north of the railway and KGS. They are post-medieval structures, a milestone and Knapton Lodge (Nos. 41, 42 on **Figure 13.1**). Both of them are a few hundred metres to the west of the pipeline route and neither is inter-visible with it.

#### **Likely Significant Effects**

13.73 Two baseline scenarios are considered. In the first scenario, the Proposed Development comprises the construction of the facilities on the Eberston Moor 'A' Well Site and the construction and operation of the pipeline between the well site and KGS. The second scenario assumes the well site has already been developed as part of the Eberston Moor EDS (ref: NYM/2013/0477/EIA), and the construction and operation of the pipeline between the well site and KGS.

13.74 If the Eberston Moor EDS proceeds, all the structures and equipment on the Eberston Moor 'A' Well Site will be constructed and operational prior to construction of this Proposed Development and will not be constructed as part of this Proposed Development. However if the Eberston Moor EDS does not go ahead prior to this Proposed Development the following construction activities will be undertaken as part of this Proposed Development. The pipeline between the well site and KGS will be constructed as part of both scenarios.

#### Construction

##### *Construction of the well site*

13.75 Construction of the Proposed Development will include the following activities as described in Chapter 6:

- Site Preparation (including excavating and grading);
- Provision of infrastructure;
- Construction; and
- Landscaping.

13.76 Site preparation whether the Ebberston Moor EDS occurs or not will involve:

- Construction of a temporary construction compound including site cabins, offices and welfare facilities to the southwest of the Ebberston Moor 'A' Well Site;
- Ground modelling works including topsoil stripping and stockpiling for later use;
- Workshop facilities for maintaining the construction equipment;
- Erection of temporary fences along the boundaries of the working width of the pipeline corridor. Gates and stiles will be incorporated into the fence wherever access by public rights of way and farm tracks are required; and
- Installation of temporary surface water management measures for construction.

Direct effects on cultural heritage sites

13.77 No cultural heritage resources (as defined in Section 13.18) have been identified on the well site. Moreover, the site visit has shown that the two existing compounds are recessed into the ground to a depth that archaeological deposits are very unlikely to survive. However, any works to the Ebberston Moor 'A' Well Site (if not already developed as part of the Ebberston Moor EDS) may involve groundwork which will have a minor adverse effect of indeterminate significance on any as yet unidentified archaeological remains adjacent to the existing compounds. The duration of the effect will be permanent and it will be physically irreversible.

13.78 The construction of the pipeline link to the well site may have a minor adverse effect of indeterminate significance on any as yet unidentified archaeological remains adjacent to the existing compounds. The duration of the effect will be permanent and it will be physically irreversible. The effects of the pipeline as a whole are detailed below (from Section 13.83).

Indirect (setting, visual) effects on cultural heritage resources (as defined by Section 13.18)

13.79 There is potential for minor effects on the settings and visual integrity of cultural heritage resources in the vicinity of the Proposed Development. In general, this is because the construction activities will be temporary and the ground surface surrounding the development platform on the well site will be returned to its prior state after construction. In addition, aspects of topography and vegetation surrounding the Proposed Development will limit inter-visibility between areas of the construction activities and nearby heritage assets.

13.80 Two Scheduled Monuments, both Bronze Age round barrows, are located close to the Ebberston Moor 'A' Well Site. One of these, located to the north, will not be inter-visible with

Proposed Development due to existing vegetation. The other, located to the southeast of the Assessment Site, will just be inter-visible from the Proposed Development, although vegetation will inhibit visibility.

- 13.81 The Proposed Development will have a temporary minor adverse effect on the prehistoric ceremonial landscape represented by the two nearby barrows. However, that setting is significantly compromised by modern forestry and, to a lesser extent, by the existing compounds within the Assessment Site.
- 13.82 The construction of the pipeline link to the well site will have a minor adverse effect on the prehistoric ceremonial landscape represented by the two nearby barrows. However, that setting is significantly compromised by modern forestry and, to a lesser extent, by the existing compounds within the Assessment Site. The duration of the effect will be short-term temporary and it will be physically reversible. The effects of the pipeline as a whole are detailed below (from Section 13.83).

*Construction of the pipeline between the well site and KGS*

- 13.83 The construction phase of the pipeline will involve: the installation of a steel pipeline 15.3 km in length, together with a fibre optic cable, from the Eberston Moor 'A' Well Site to KGS using an open trench for the majority of the length. However, where crossing the railway, the River Derwent and roads, auger boring, directional drilling or suitable alternative installation technique will be used to limit surface disturbance (see Chapter 6 for more detail). The construction working width for the pipeline will be 30m across. The working corridor will be required to allow for the laying down of pipe work, the movement of construction vehicles and the use of machinery required for the construction of the pipeline. Details on construction methods for the pipeline are provided in Chapter 6.

Direct effects on cultural heritage sites (as defined in Section 13.18)

- 13.84 The pipeline will cross, and therefore have a direct effect on, several cultural heritage resources recorded by the Historic Environment Records for North Yorkshire County Council and North York Moors National Park Authority.
- 13.85 Towards the well site, the pipeline will cross the site of a post-medieval farmhouse (**Figure 13.2**, No. 122). The Proposed Development will have a minor adverse effect of low significance, though mitigation of this by archaeological recording will result in a minor beneficial effect.

- 13.86 A little further south, close to Givendale Head Farm is the continuation of prehistoric Allerston West Dyke (**Figure 13.2**, No. 114). The pipeline will have a moderate adverse effect of medium significance on this feature, though mitigation of this by archaeological recording will result in a moderate beneficial effect.
- 13.87 Also near Givendale Head Farm, the Proposed Development will cross two prehistoric pit alignments (**Figure 13.1**, No. 37; **Figure 13.2**, Nos. 103, 113). These are parts of a Scheduled Monument. At this location it is intended to auger bore the pipeline to a depth of 2-3m beneath the monument. Consequently, the effect of the Proposed Development on the scheduled monument will be negligible.
- 13.88 About 2.5km further to the southwest, near Warren House, the pipeline will cross a prehistoric dyke, Diggerfoot Dyke (**Figure 13.1**, Nos. 24-5; **Figure 13.2**, Nos. 116, 117). The Proposed Development will have a moderate adverse effect of medium significance, though mitigation of this by archaeological recording will result in a moderate beneficial effect.
- 13.89 At the southern end of the pipeline, by KGS, the pipeline will cross medieval ditches (**Figure 13.1**, No. 6) and field boundaries of Iron Age-Roman date (**Figure 13.1**, No. 50). This will have a minor adverse effect of low significance, though mitigation of this by archaeological recording will result in a minor beneficial effect.
- 13.90 In addition to the cultural heritage resources registered by the two Historic Environment Records, evidence of other cultural heritage sites was identified during the site visits (see **Appendix 13.1**) and geophysical survey (see **Appendix 13.2**). A cluster of Roman pottery was noted on the north side of the A170 Wilton-Allerston Road, near Warren House. To the south of the River Derwent, a second concentration of Roman pottery was observed while at the southern end of the route, immediately west of KGS, a thin scatter of prehistoric flints was observed. Geophysical survey was carried out at the two Roman pottery clusters. At the pottery cluster north of the A170 a ditch and possible pits were recorded (**Appendix 13.2**). At the second pottery concentration south of the River Derwent, no distinct archaeological remains were identified other than a few possible pits. The Proposed Development will have a minor adverse effect of uncertain but probably low significance on these cultural heritage resources. However, mitigation of this by archaeological recording will result in a moderate beneficial effect.
- 13.91 Geophysical survey was also carried out near the northern limit of the proposed pipeline route, in an area where prehistoric remains are recorded on the Historic Environment Record.

However, the survey results were affected by magnetic disturbance from a pre-existing pipeline and, other than possible pits, no archaeological remains were identified (**Appendix 13.2**). It is likely that, in this area, the Proposed Development will have a negligible adverse effect of negligible significance.

- 13.92 Any groundwork for the Proposed Development could have a minor adverse effect of indeterminate significance on any as yet unidentified archaeological remains along the proposed pipeline route. The duration of the effect will be permanent and it will be physically irreversible.

Indirect (setting, visual) effects on cultural heritage resources (as defined by Section 13.18)

- 13.93 Immediately northwest of the northern terminus of the Proposed Development is an area of post-medieval quarrying and lime kilns (**Figure 13.2**, Nos. 84, 86, 120). The Proposed Development will have a negligible effect of negligible significance on these features.
- 13.94 Close to the northern terminus of the pipeline, and the Ebberston Moor 'A' Well Site, are two prehistoric barrows, both Scheduled Monuments (**Figure 13.2**, Nos. 83, 89). One of these (No. 89), located to the north, will not be inter-visible with the Proposed Development due to existing vegetation. The other (No. 83), located to the southeast of the well site, will just be inter-visible from the Proposed Development, although vegetation will inhibit visibility. The Proposed Development will have a temporary and reversible minor adverse effect on the setting of the two nearby barrows. However, that setting is already significantly compromised by modern forestry and the existing well site and Lockton Compound. However, as Scheduled Monuments they are of high significance and English Heritage are currently being consulted on the Proposed Development and its relationship to these monuments.
- 13.95 About 1 km to the southwest the pipeline passes close to a prehistoric pit alignment, which is a Scheduled Monument (**Figure 13.2**, No. 105). The Proposed Development will have a minor adverse effect on the setting and visual integrity of this monument, and the duration of this effect will be temporary and reversible. However, as the feature is a Scheduled Monument it is of high significance and English Heritage are currently being consulted on the Proposed Development and its relationship to the pit alignment.
- 13.96 Immediately adjacent to the aforementioned prehistoric pit alignment is a post-medieval boundary (**Figure 13.2**, No. 115). The Proposed Development will have a minor adverse effect on the setting and visual integrity of this feature, and the duration of this effect will be temporary and reversible.

- 13.97 A little further to the southwest the Proposed Development passes through an area which contains the remains, or sites, of a number of prehistoric barrows and cairns (**Figure 13.2**, Nos. 108, 110-2, 123, 126-7, 129-131). Several of these are Scheduled Monuments (Nos. 110-112, 123, 126, 129-131). The Proposed Development will have a minor adverse effect on the setting of these monuments, but the duration of this effect will be temporary and reversible. Currently, all of these monuments are in woodland and will not be inter-visible from the pipeline route and, hence, the Proposed Development will have no visible impact on these cultural heritage resources. However, as Scheduled Monuments they are of high significance and English Heritage will have to be consulted on the Proposed Development and its relationship to these monuments.
- 13.98 Approximately 1 km further south, close to Givendale Head Farm, the Proposed Development will cross two prehistoric pit alignments (**Figure 13.1**, No. 37; **Figure 13.2**, Nos. 103, 113), both of them parts of a Scheduled Monument. The Proposed Development will have a minor adverse effect on the setting and visual integrity of the monuments, and the duration of this effect will be temporary and reversible. However, as parts of a Scheduled Monument they are of high significance and English Heritage will have to be consulted on the Proposed Development and its relationship to these monuments.
- 13.99 Further to the southwest the Proposed Development passes close to several former rabbit warrens, referred to as 'types' or 'traps' (**Figure 13.2**, Nos. 135, 137, 141). The Proposed Development will have a negligible and temporary adverse effect on the setting and visual integrity of these features.
- 13.100 North of Warren House, the Proposed Development crosses the line of a prehistoric dyke, Diggerfoot Dyke (**Figure 13.1**, Nos. 24-5; **Figure 13.2**, Nos. 116, 117). This mostly survives as a below-ground feature that produces a cropmark. Consequently, the Proposed Development will have a negligible adverse effect on the setting and visual integrity of this feature.
- 13.101 A little further to the south, close to Warren House, the pipeline route passes about 50m from a barrow, which is a Scheduled Monument (**Figure 13.1**, No. 27). The barrow is located within trees and, at present, there will be limited inter-visibility between the Proposed Development alignment and the barrow. The Proposed Development will have a negligible-minor adverse effect on the setting and visual integrity of the monument, but this will be counteracted by clearance of woodland as part of the landscaping works (see Section 13.104, below). English Heritage is currently being consulted on the Proposed Development and its relationship to this monument.

13.102 Close to the southern end of the pipeline route, about 1.5 km northwest of KGS, the Proposed Development bypasses two Listed Buildings (**Figure 13.1**, Nos. 41-2). These are at least 250m from the pipeline route, and there are intervening hedgerows and other vegetation. Consequently, the Proposed Development presents no visual impact on these cultural heritage resources, and a negligible adverse effect on the setting of the resources. However, English Heritage is currently being consulted on the Proposed Development and its relationship to these designated cultural heritage resources.

13.103 Although the Proposed Development crosses several cultural heritage sites (**Figure 13.1**, Nos. 6, 50) at the southern end of the route close to KGS, these remains have no above-ground expression. Consequently, the Proposed Development has negligible adverse effect on the setting of these remains, and no visual impact.

#### *Landscaping*

13.104 Landscaping works will involve some ground modelling works. The works will include soil preparation, tree and vegetation planting and seeding. The ground modelling works will be undertaken concurrently with the site preparation and below ground works outlined above. The sequence of works will be:

- Clear felling of woodland and clearance of other vegetation;
- Stripping and stockpiling of existing topsoil;
- Placement of materials recovered from excavations for foundations, roadways and pipeline and services trenches;
- Placement of topsoil; and
- Tree and vegetation planting and seeding.

13.105 It is expected that clearance of woodland and other vegetation will comprise removal of above-surface plant growth and will not involve any uprooting or digging out of roots or stumps.

#### Direct effects on cultural heritage sites (as defined in Section 13.18)

13.106 The removal of surface vegetation will have no effect on cultural heritage resources along the pipeline route. Measures will be taken to avoid compaction or rutting by machines in areas where cultural heritage resources have been identified.

Indirect (setting, visual) effects on cultural heritage resources (as defined by Section 13.18)

13.107 The removal of vegetation, particularly forestry, along the Proposed Development route will have a moderate to major beneficial effect on any cultural heritage resources within the 30m construction working width.

*Other landscaping aspects*

13.108 As noted above (**Section 13.104**), other landscaping works will be undertaken concurrently with the site preparation and below ground works outlined above. As such, they form part of the construction phase, and are considered above.

Permanent Reinstatement

13.109 Reinstatement of the surface of the land is normally carried out within the same season as construction. Walls and fences will be reinstated and hedges replanted between protective fences. Permanent pipeline markers and cathodic protection test posts will be installed at agreed locations. Finally, any temporary fencing along the working width will be removed.

Direct effects on cultural heritage sites

13.110 Reinstatement of the land surface features will have no direct effect on cultural heritage resources (as defined in Section 13.18).

Indirect (setting, visual) effects on cultural heritage resources (as defined by Section 13.18)

13.111 Reinstatement of the land surface features, and particularly removal of temporary fencing, will have a moderate beneficial effect on the settings and visual integrity of cultural heritage resources in the vicinity of the Proposed Development. This is because the ground surface surrounding the development platform will be returned to its prior state after construction and temporary visual impacts will be removed.

Operation

*Direct effects on cultural heritage resources (as defined by Section 13.18)*

13.112 The operational phase of the Proposed Development will not involve any further ground disturbance beyond that undertaken under the initial construction. Therefore, the operation



phase of the Proposed Development will have no direct effect on cultural heritage resources.  
*Indirect (setting, visual) effects on cultural heritage resources (as defined by Section 13.18)*

13.113 The operational phase of the Proposed Development will not involve any further ground disturbance beyond that undertaken under the initial construction. Therefore, the operation phase of the Proposed Development will have no indirect effect on the setting and visual integrity of cultural heritage resources.

Decommissioning and Restoration

*Direct effects on cultural heritage sites*

13.114 The decommissioning and restoration phase of the Proposed Development for either scenario (as described in Chapter 6) will involve excavation into ground already disturbed by the construction phase, and removal of plant and installations. Therefore, this phase of the Proposed Development will have no direct effect on cultural heritage resources.

*Indirect (setting, visual) effects on cultural heritage resources (as defined by Section 13.11)*

13.115 The decommissioning of the Eberston Moor 'A' Well Site if future planning permission is not secured will remove the visual impact it would have on nearby heritage resources. Therefore, the demolition and restoration phase of the well site will have an overall moderate beneficial effect on the settings and visual integrity of cultural heritage resources in the vicinity of the Assessment Site.

13.116 If planning permission for the second phase of Eberston Moor 'A' Well Site is secured, the structures and equipment on the well site will be retained. However, the retention and use of the equipment and structures on the well site will have a minor adverse effect on the prehistoric ceremonial landscape represented by the two nearby barrows. This will be a continuation of the minor setting affects on the nearby cultural heritage resources presented by the operational stage of development.

13.117 The pipeline will be left in place. Therefore, there will be no effect on the setting of the nearby cultural heritage resources.

### **Mitigation Measures**

13.118 Research and the site visits have indicated that a number of cultural heritage resources (as

defined in section 13.18) are located on the Assessment Site. Consequently, archaeological intervention or other mitigation measures are required prior to and during the Proposed Development.

- 13.119 In those areas where the Proposed Development crosses or closely approaches cultural heritage resources of low sensitivity, or is further away from cultural heritage features of medium-high sensitivity, a programme of archaeological monitoring and recording will be carried out of the initial construction work within the Proposed Development working corridor across these areas. These areas include: the vicinity of a prehistoric pit alignment (**Figure 13.2**, No. 105), which is a Scheduled Monument, near the northern end of the proposed pipeline route; the vicinity of a prehistoric barrow (**Figure 13.1**, No. 27), which is a Scheduled Monument, near to Warren House; a concentration of Roman pottery identified south of the River Derwent (see **Appendix 13.1**); and areas of Iron Age-Roman and medieval ditches at the southern end (**Figure 13.1**, Nos. 6, 50).
- 13.120 In those areas where the Proposed Development crosses or closely approaches cultural heritage resources of medium sensitivity, or of uncertain significance, a programme of archaeological trial trench evaluation will be undertaken area prior to the commencement of development. Subject to the results of the trenching, a programme of archaeological monitoring and recording will be carried out of the initial construction work within the Proposed Development working corridor across these areas. These areas include: the site of a post-medieval farmhouse (**Figure 13.2**, No. 122) and adjacent earthworks observed during a site visit (**Appendix 13.1**); the continuation of the prehistoric Allerston West Dyke (**Figure 13.2**, No. 114), approximately 500m north of Givendale Head Farm; approximately 1km north of Warren House where the alignment of a prehistoric ditch is known (**Figure 13.1**, Nos. 24-5); and just north of the A170 Wilton-Allerston Road where a cluster of Roman pottery was identified during a site visit (**Appendix 13.1**) and a ditch and possible pits were recorded by geophysical survey (**Appendix 13.2**).
- 13.121 At two locations in the northern part of the Proposed Development, the pipeline route will cross prehistoric linear features which are protected as Scheduled Monuments (**Figure 13.2**, Nos. 103, 113). At these locations it is proposed that directional drilling or an alternative installation technique is used to carry the pipeline to a depth of 2-3m beneath the Scheduled Monuments. Launch and receptor pits for the auger boring or directional drilling will be located at least 10m from the Scheduled Monument, and the excavation of these will be subject to archaeological monitoring.
- 13.122 Any archaeological recording of potential remains should meet the specific requirements of

the Archaeological Curators.

13.123 No mitigation measures are required during operation or decommissioning and restoration.

### **Residual Effects**

#### Construction

13.124 The residual effect of the Proposed Development on any, as yet, unknown cultural heritage resources (as defined in Section 13.18) at the Assessment Site will be moderate beneficial, as mitigation measures will result in the recording of previously unknown cultural heritage remains.

#### Operation

13.125 When the Proposed Development is complete, and operating, the direct and indirect effects on any potential cultural heritage resources (as defined in Section 13.18) will be none.

#### Decommissioning and Restoration

##### *Direct effects on cultural heritage sites (as defined by Section 13.18)*

13.126 The decommissioning and restoration phase of the well site for either scenario (as described in Chapter 6) will involve excavation into ground already disturbed by the construction phase, and removal of plant and installations. Therefore, this phase of the Proposed Development will have no direct effect on cultural heritage resources.

##### *Indirect (setting, visual) effects on cultural heritage resources (as defined by Section 13.18)*

13.127 The decommissioning of the well site, if future planning permission is not secured will remove the visual impact it will have on nearby heritage resources during construction and operation. Therefore, the decommissioning and restoration phase will have an overall moderate beneficial effect on the settings and visual integrity of cultural heritage resources in the vicinity of the well site.

13.128 If planning permission for future use of the well site is secured, the structures and equipment on the well site will be retained. The retention and use of the equipment and structures on the well site will have a minor adverse effect on the prehistoric ceremonial landscape represented by the two nearby barrows. This will be a continuation of the minor

adverse setting affects on the nearby cultural heritage resources presented by the construction phase.

### **Cumulative Effects**

- 13.129 The cumulative effects of the Proposed Development, in conjunction with the Ebberston Moor EDS, will be minor-moderate beneficial. This is because archaeological recording will accompany the developments (in those areas not already impacted by ground reduction) and will provide information on the presence or absence of cultural heritage resources along the Assessment Site routes. This will therefore supplement the information gain about cultural heritage resources achieved by the Ebberston Moor EDS.
- 13.130 The Proposed Development itself will have only a temporary and reversible minor adverse effect on the setting of nearby cultural heritage resources. Therefore, due to the scale of development and its reversibility, the cumulative effect, with the Ryedale Gas Project, on the setting of cultural heritage resources will be minor-negligible.

### **Summary**

- 13.131 A number of cultural heritage resources (as defined in Section 13.18) have been identified on the route of the Proposed Development. Site visits and geophysical survey have also identified archaeological remains on or close to the route.
- 13.132 Several prehistoric monuments, most of them nationally-important Scheduled Monuments, are located in the study area and in close proximity to the pipeline route. Two sections of one of these Scheduled Monuments (**Figure 13.2**, Nos. 103, 113) will be directly affected by the Proposed Development. Mitigation measures involving auger boring the pipeline beneath the monuments are proposed.
- 13.133 The remaining Scheduled Monuments within the study area are not located on the pipeline route. However, during the construction phase the Proposed Development may have minor adverse effects on the setting and visual integrity of the nearby Scheduled Monuments. These include barrows close to the northern terminus of the pipeline route (Nos. 83 and 89 on **Figure 13.2** respectively), and another barrow near Warren House (No. 27 on **Figure 13.1**).
- 13.134 Other, non-designated, archaeological remains have been identified on the pipeline route. These include: the site of a post-medieval farmhouse towards the northern end of the route;

north of the A170 road, prehistoric ditches near Warren House and Givendale Head Farm; Roman pottery scatters south of the River Derwent; and Iron Age-Roman and medieval ditches at the southern end of the pipeline route. The construction phase of the Proposed Development will have a minor adverse effect on these remains. The operational and decommissioning and restoration phases will have no effect.

13.135 Further non-designated archaeological remains have been identified within the Study Area, in close proximity to the pipeline route. The construction phase of the Proposed Development will have a negligible-minor adverse effect on these remains. The operational and decommissioning and restoration phases will have no effect.

13.136 It is proposed that programmes of archaeological work are undertaken in specified areas to mitigate the effects of the Proposed Development. This archaeological work will involve trial trench evaluation prior to construction, and archaeological monitoring during construction groundwork.

13.137 Any archaeological recording of potential remains should meet the specific requirements of the Archaeological Curators.

13.138 **Table 13.1** provides a summary of the likely significant effects.

**Table 13.1: Table of Significance – Archaeology and Cultural Heritage**

| Potential Effect                                                                                                                                                                                                                                                                               | Nature of Effect<br>(Permanent/<br>Temporary) | Significance<br>(Major/Moderate<br>/Minor)<br>(Beneficial/Adverse/<br>Negligible) | Mitigation /<br>Enhancement Measures                                             | Geographical Importance* |    |   |   |   |              |   | Residual<br>Effects<br>(Major/Moderate/<br>Minor)<br>(Beneficial/<br>Adverse/<br>Negligible) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------|----|---|---|---|--------------|---|----------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                |                                               |                                                                                   |                                                                                  | I                        | UK | E | R | C | D/<br>N<br>P | L |                                                                                              |
| <b>Construction Phase</b>                                                                                                                                                                                                                                                                      |                                               |                                                                                   |                                                                                  |                          |    |   |   |   |              |   |                                                                                              |
| Damage / destruction of buried archaeological remains or deposits within Assessment Site: site of post-medieval farm and adjacent earthworks; continuation of prehistoric Allerston West Dyke; alignment of prehistoric ditch near Warren House; and Roman pottery cluster north of A170 road. | Permanent                                     | Minor / Moderate Adverse                                                          | archaeological evaluation of specified locations prior to development commencing |                          |    |   |   |   | *            |   | Moderate Beneficial                                                                          |
| Damage / destruction of buried archaeological remains or deposits within Assessment Site: vicinity of Scheduled Monument prehistoric pit alignment near northern end of route and vicinity of Scheduled Monument prehistoric barrow near Warren House                                          | Permanent                                     | Minor / Moderate Adverse                                                          | archaeological monitoring of specified locations during groundworks              |                          | *  |   |   |   |              |   | Moderate Beneficial                                                                          |
| Damage / destruction of buried archaeological remains or deposits within Assessment Site: concentration of Roman pottery south of River Derwent and Iron Age-Roman and medieval ditches near KGS.                                                                                              | Permanent                                     | Minor / Moderate Adverse                                                          | archaeological monitoring of specified locations during groundworks              |                          |    |   |   |   | *            |   | Moderate Beneficial                                                                          |

| Potential Effect                                                                                                      | Nature of Effect<br>(Permanent/<br>Temporary) | Significance<br>(Major/Moderate<br>/Minor)<br>(Beneficial/Adverse/<br>Negligible) | Mitigation /<br>Enhancement Measures                                                       | Geographical Importance* |        |   |   |   |              | Residual<br>Effects<br>(Major/Moderate/<br>Minor)<br>(Beneficial/Adverse/<br>Negligible) |                        |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------|--------|---|---|---|--------------|------------------------------------------------------------------------------------------|------------------------|
|                                                                                                                       |                                               |                                                                                   |                                                                                            | I                        | U<br>K | E | R | C | D/<br>N<br>P |                                                                                          | L                      |
| Damage / destruction of buried archaeological remains or deposits on Givendale Head pit alignment Scheduled Monument. | Permanent                                     | Negligible                                                                        | auger boring beneath monument; archaeological monitoring of auger launch and receptor pits |                          | *      |   |   |   |              |                                                                                          | Moderate<br>Beneficial |
| Visual and landscape effects on Scheduled Monument: Givendale Head pit alignment                                      | Short term temporary                          | Moderate Adverse                                                                  |                                                                                            |                          | *      |   |   |   |              |                                                                                          | Minor Adverse          |
| Visual and landscape effects on Scheduled Monument: Eberston Low Moor Round Barrow                                    | Short term temporary                          | Moderate Adverse                                                                  |                                                                                            |                          | *      |   |   |   |              |                                                                                          | Minor Adverse          |
| Visual and landscape effects on Scheduled Monument: Warren House Round Barrow                                         | Short term temporary                          | Minor Adverse                                                                     |                                                                                            |                          | *      |   |   |   |              |                                                                                          | Minor Beneficial       |
| Landscape effect on setting of Scheduled Monument: Eberston Low Moor earthworks                                       | Short Term temporary                          | Minor Adverse                                                                     |                                                                                            |                          | *      |   |   |   |              |                                                                                          | Negligible<br>Adverse  |
| <b>Operation</b>                                                                                                      |                                               |                                                                                   |                                                                                            |                          |        |   |   |   |              |                                                                                          |                        |
| Visual and landscape effects on Scheduled Monument: Warren House Round Barrow                                         | Long term temporary                           | Negligible                                                                        |                                                                                            |                          | *      |   |   |   |              |                                                                                          | Minor Beneficial       |
| Visual and landscape effects on Scheduled Monument: Givendale Head pit alignment                                      | Long term temporary                           | Moderate Adverse                                                                  |                                                                                            |                          | *      |   |   |   |              |                                                                                          | Minor Adverse          |
| Visual and landscape effects on Scheduled Monument: Warren House Round Barrow                                         | Long term temporary                           | Negligible                                                                        |                                                                                            |                          | *      |   |   |   |              |                                                                                          | Minor Beneficial       |
| Visual and landscape effects on Scheduled Monument: Givendale Head pit alignment                                      | Long term temporary                           | Moderate Adverse                                                                  |                                                                                            |                          | *      |   |   |   |              |                                                                                          | Minor Adverse          |

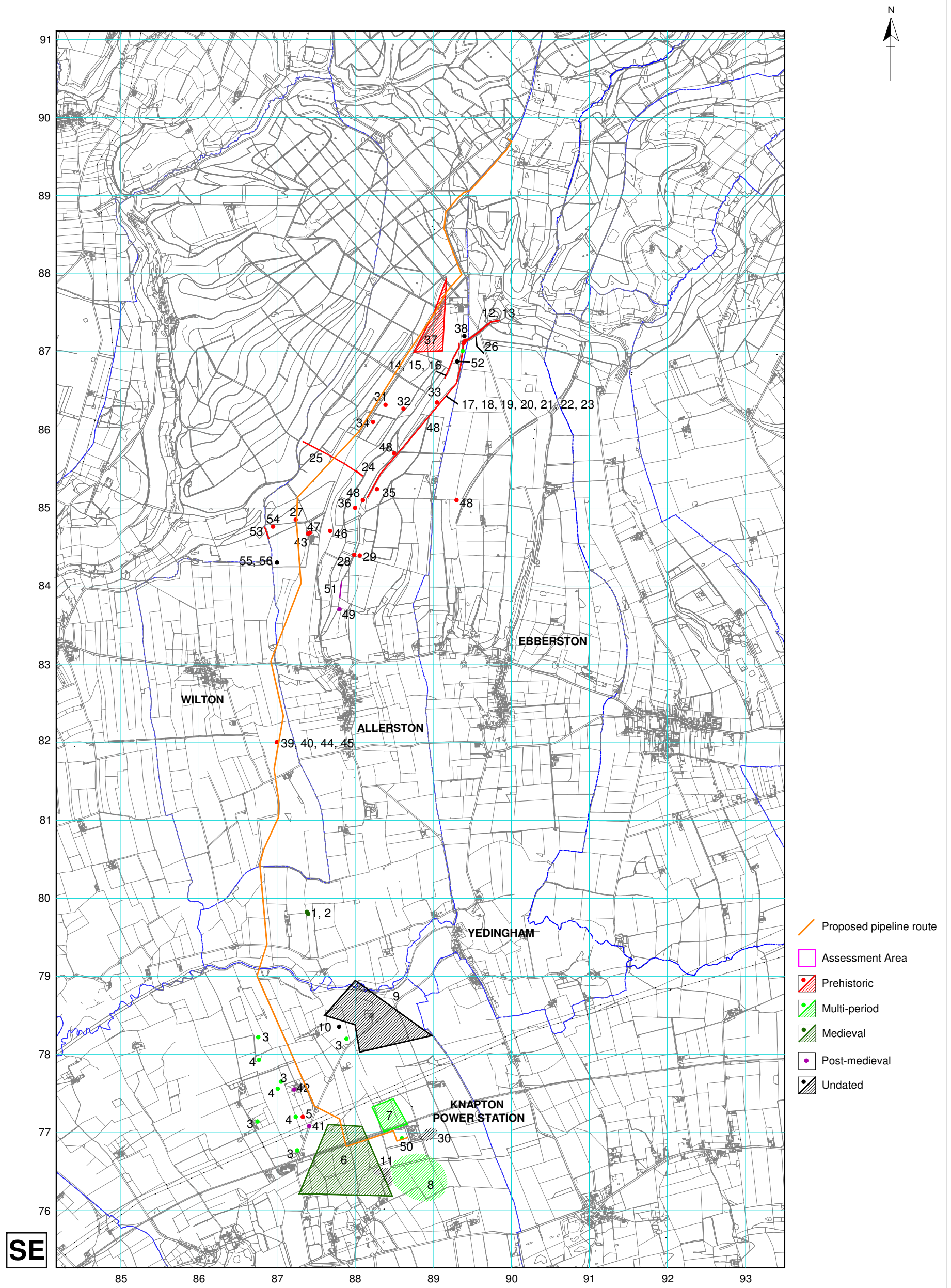
| Potential Effect                                                                                    | Nature of Effect<br>(Permanent/<br>Temporary) | Significance<br>(Major/Moderate<br>/Minor)<br>(Beneficial/Adverse/<br>Negligible) | Mitigation /<br>Enhancement Measures | Geographical Importance* |        |   |   |   |              | Residual<br>Effects<br>(Major/Moderate/<br>Minor)<br>(Beneficial/Adverse/<br>Negligible) |                     |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------|--------------------------|--------|---|---|---|--------------|------------------------------------------------------------------------------------------|---------------------|
|                                                                                                     |                                               |                                                                                   |                                      | I                        | U<br>K | E | R | C | D/<br>N<br>P |                                                                                          | L                   |
| Visual and landscape effects on Scheduled Monument: Ebberston Low Moor Round Barrow                 | Long term temporary                           | Moderate Adverse                                                                  |                                      |                          | *      |   |   |   |              |                                                                                          | Minor Adverse       |
| Increased traffic movement affecting setting of Scheduled Monument: Ebberston Low Moor Round Barrow | Long term temporary                           | Moderate Adverse                                                                  |                                      |                          | *      |   |   |   |              |                                                                                          | Minor Adverse       |
| Increased traffic movement affecting setting of Scheduled Monument: Ebberston Low Moor Round Barrow | Long term temporary                           | Moderate Adverse                                                                  |                                      |                          | *      |   |   |   |              |                                                                                          | Minor Adverse       |
| Increased traffic movement affecting setting of Scheduled Monument: Ebberston Low Moor Round Barrow | Long term temporary                           | Moderate Adverse                                                                  |                                      |                          | *      |   |   |   |              |                                                                                          | Minor Adverse       |
| Landscape effects on setting of Scheduled Monument: Ebberston Low Moor earthworks                   | Long term temporary                           | Negligible Adverse                                                                |                                      |                          | *      |   |   |   |              |                                                                                          | Negligible Adverse  |
| <b>Demolition and Restoration</b>                                                                   |                                               |                                                                                   |                                      |                          |        |   |   |   |              |                                                                                          |                     |
| Visual and landscape effects on Scheduled Monument: Ebberston Low Moor Round Barrow                 | Short term temporary                          | Moderate Adverse                                                                  |                                      |                          | *      |   |   |   |              |                                                                                          | Moderate Beneficial |
| Increased traffic movement of Scheduled Monument: Ebberston Low Moor Round Barrow                   | Short term temporary                          | Moderate Adverse                                                                  |                                      |                          | *      |   |   |   |              |                                                                                          | Moderate Beneficial |



| Potential Effect                                                                  | Nature of Effect<br>(Permanent/<br>Temporary) | Significance<br>(Major/Moderate<br>/Minor)<br>(Beneficial/Adverse/<br>Negligible) | Mitigation /<br>Enhancement Measures | Geographical Importance* |        |   |   |   |         |   | Residual<br>Effects<br>(Major/Moderate/<br>Minor)<br>(Beneficial/Adverse/<br>Negligible) |                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------|--------------------------|--------|---|---|---|---------|---|------------------------------------------------------------------------------------------|---------------------|
|                                                                                   |                                               |                                                                                   |                                      | I                        | U<br>K | E | R | C | B/<br>D | L |                                                                                          |                     |
| Landscape effects on setting of Scheduled Monument: Ebberston Low Moor earthworks | Short term temporary                          | Moderate Beneficial                                                               |                                      |                          | *      |   |   |   |         |   |                                                                                          | Moderate Beneficial |
| <b>Cumulative Effects</b>                                                         |                                               |                                                                                   |                                      |                          |        |   |   |   |         |   |                                                                                          |                     |
| Construction Phase                                                                | Short term temporary                          | Negligible Adverse                                                                |                                      |                          |        |   |   |   | *       |   |                                                                                          | Minor Beneficial    |
| Operational Phase                                                                 | Long term temporary                           | Negligible Adverse                                                                |                                      |                          |        |   |   |   | *       |   |                                                                                          | None                |
| Demolition and Restoration                                                        | Short term temporary                          | Minor Beneficial                                                                  |                                      |                          |        |   |   |   | *       |   |                                                                                          | Minor Beneficial    |

**\* Geographical Level of Importance**

I = International; UK = United Kingdom; E = England; R = Regional; C = County;; D = District; NP = National Park; L = Local



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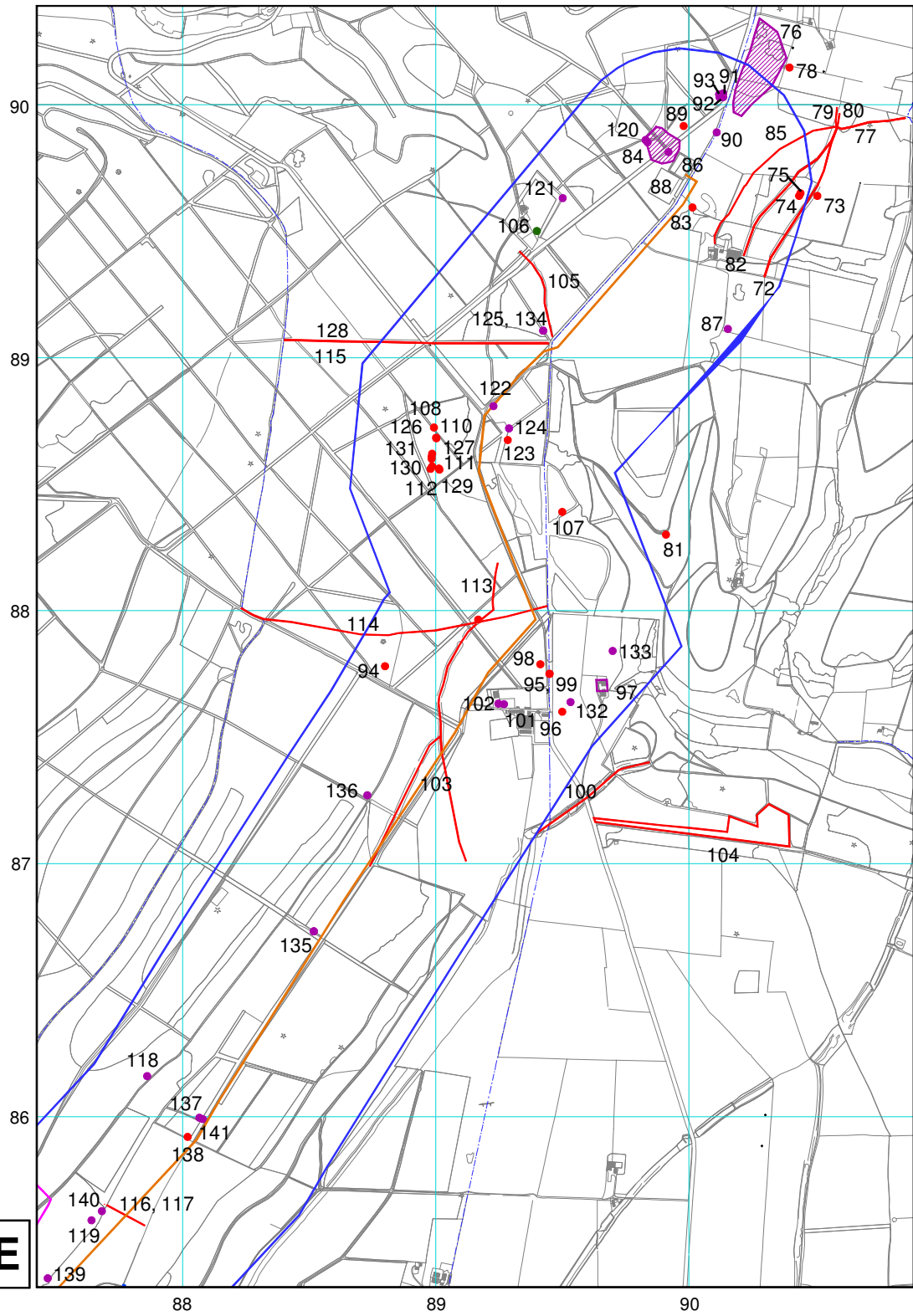


Archaeological Project Services






Project Name: Knapton Gas Pipeline KEGP13

Scale 1:50000 Drawn by: PCF Report No: 64/13

Figure 13.1 - North Yorkshire County Council Historic Environment Data



SE

-  Proposed pipeline route
-  Assessment area
-  Prehistoric
-  Early medieval
-  Post-medieval



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|                                                                                      |                                        |                  |
|--------------------------------------------------------------------------------------|----------------------------------------|------------------|
|  | <b>Archaeological Project Services</b> |                  |
| Project Name: Knapton Gas Pipeline KEPG13                                            |                                        |                  |
| Scale 1:25000                                                                        | Drawn by: PCF                          | Report No: 64/13 |

Figure 13.2 - North Yorkshire Moors National Park Historic Environment Data