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TINKER LANE WRITTEN SCHEME OF INVESTIGATION FOR AN ARCHAEOLOGICAL WATCHING BRIEF

**For the Discharge of Condition 31 of Planning
Permission 1/16/00773/CDM
Prepared for: IGas Energy plc**

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1.0 Introduction

1.1 Scope

Condition 31 of planning permission 1/16/00773/CDM for the drilling of monitoring boreholes and an exploratory well on land off the A634 between Blyth and Barnby Moor requires the following:

31. Prior to the commencement of the Construction Phase a written scheme of archaeological investigation and recording for the site shall be submitted to, and approved in writing by, the MPA. Such a scheme shall include:

- a) The provision of a watching-brief during soil stripping and cut and fill activities;***
- b) The excavation and recording of unexpected discoveries;***
- c) The reporting and archiving of all archaeological work carried out during the course of the development.***

The scheme shall thereafter be carried out as approved.

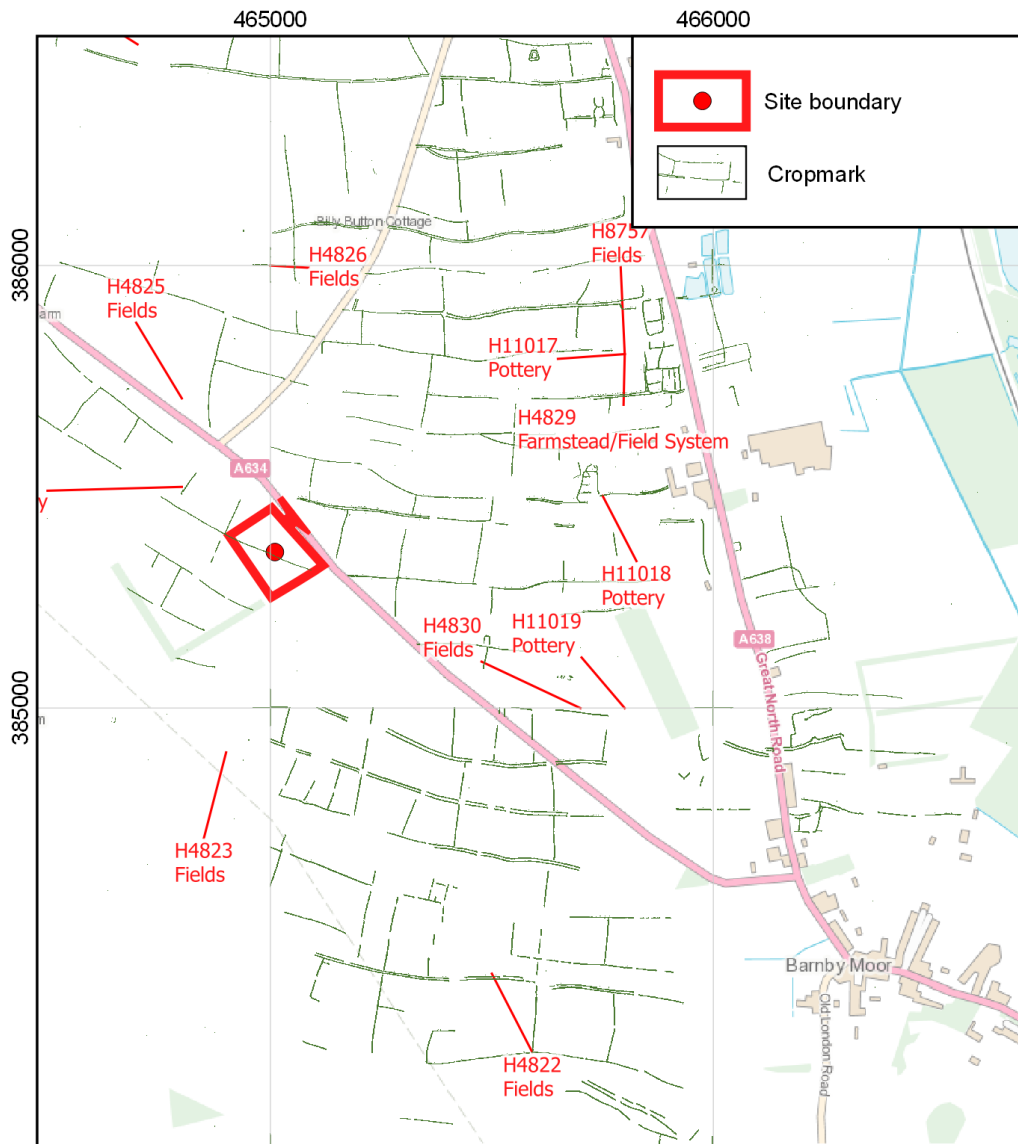
Reason: Details are required prior to the commencement of the Construction Phase to ensure that adequate archaeological investigation and recording is carried in accordance with Policy M3.24 of the MLP.

This document consists of a Written Scheme of archaeological Investigation and recording (WSI) provided to comply with the above condition.

1.2 The Project

The development site is centred on National Grid reference 465018, 385354 (Figure 1-1).

Figure 1-1
Site Location



OpenData Mapping: Contains Ordnance Survey data © Crown copyright and database right 2017

1.3 Archaeological Potential

An Environmental Statement prepared for IGas by SLR Consulting¹ identified the following archaeological potential relating to the site:

“The Historic Environment Record contains no record located within the application site. However the National Mapping Programme’s cropmark mapping indicates the presence of a single ditch within the site; it forms part of the ‘brickwork-plan’ field system which is widespread through the study area. Because it is a cropmark it cannot be seen on the surface except where there is a suitable crop at a suitable stage of development, and then chiefly from the air. The ditch is orientated north-west to south-east and there is no indication in the plots of other features within the application site.

The brickwork-plan field systems characteristically produce no or very few finds except where enclosures – presumably indicating settlement – are known. Even at settlement locations finds are sparse. The settlements are indicated by smaller and more complex enclosures: such enclosures are indicated within the study area ... [but] ... there is no indication of an enclosure within or adjacent to the application site.

The HER contains no records which are sufficiently close to the application site to suggest they might extend within it. Post-medieval pottery finds H11024 and H11025 are both recorded to the east of the site and are presumed to represent manuring. A Bronze Age flint flake was found to the south east.

There is nothing to suggest that other archaeological features are present within the application site.

The long-term and continued arable use of the application site indicates that any archaeological features present are likely to have been eroded by ploughing.

There is no evidence to suggest that any archaeological remains present are likely to be of greater than local significance. Their heritage significance is predicted to be no greater than medium”.

1.4 Duration of Works and Potential Variations

Site works are planned to commence during the autumn of 2017. Mechanical removal of topsoil and subsoil is to take approximately 10 working days.

¹ SLR Consulting 2016: Tinker Lane 1 Exploratory Well, Retford Road, between Blyth and Barnby Moor, Nottinghamshire – Environmental Statement

2.0 Standards, Key Personnel, Monitoring and Safety

2.1 Professional Standards

SLR and their subcontractor Trent & Peak Archaeology are Registered Organisations with the Chartered Institute for Archaeologists. Their work is accordingly undertaken to the highest professional standards. All archaeological fieldwork and reporting will be carried out in accordance with the relevant Chartered Institute for Archaeologists' guidance².

2.2 Key Personnel

The archaeological regulator is:

Ursilla Spence
County Archaeologist ('CA')
Nottinghamshire County Council
County Hall
West Bridgford
Nottingham
NG2 7QP
Tel: 0115 9932603

The archaeological consultant is:

Gavin Kinsley
Associate Archaeologist
SLR Consulting
Aspect House, Aspect Business Park
Bennerley Road
Nottingham NG6 8WR
Tel: 0115 964 7280

The archaeological subcontractor is:

Trent & Peak Archaeology (Paul Flintoft)
Unit 1
Holly Lane
Chilwell
Nottingham
NG9 4AB
Tel. 01926 412278

Processing, assessment and analysis will be carried out by appropriate specialists within Trent & Peak Archaeology. The results will be reviewed and incorporated into reporting by the archaeological consultant.

An accession number will be obtained from the destination museum prior to commencement of fieldwork. If the destination museum refuses to accept the deposition, SLR will contact the CA immediately.

² Chartered Institute for Archaeologists 2014: *Standard and Guidance for an Archaeological Watching-Brief*

The proposed destination museum is:

Bassetlaw Museum
Amcott House
40 Grove Street
Retford
Nottinghamshire
DN22 6LD

An Online Access to the Index of archaeological investigations (OASIS) record will be set up prior to the commencement of fieldwork and will be completed along with the archive.

2.3 Monitoring

It is expected that all archaeological work will be monitored by the CA either directly on site and / or through summary reports and telephone / email as appropriate.

The CA has been informed of the project timetable and will be continually updated by SLR, as appropriate, as the work proceeds. She is invited to visit the site by prior arrangement with SLR during the fieldwork and discuss the results with SLR.

Monitoring may include:

- one or more site meetings to confirm that the fieldwork is being undertaken correctly, discuss the findings and the scope of investigation of any archaeological features which may be discovered; and
- review and discussion of all reports and archives drafts before submission.

SLR will provide the Client and the CA with progress reports as required during the archaeological works.

Site visits and progress reports will form the basis for decisions as to when each area of watching-brief has been completed satisfactorily and development can proceed on the completed area.

Once all excavation on a given area has been completed according to the satisfaction of the CA, the CA will provide written confirmation of this and that there is no reason from the archaeological perspective why development should not proceed on that area.

Subsequent archiving and reporting of the work on that given area will then be commenced in accordance with this WSI.

2.4 Health and Safety

SLR will operate in accordance with the health and safety procedures as set out in:

- the *Health and Safety at Work Act 1974* and related legislation.
- the Federation of Archaeological Managers and Employers (FAME) *Manual of Health and Safety in Field Archaeology* 2010
- the Council for British Archaeology Handbook no. 6, *Safety in Archaeological Fieldwork* (1989); and
- the SLR *Health and Safety Handbook*.

All necessary protective clothing and equipment will be used. The archaeologists on site would wear hard hats, gloves, reflective or high visibility vests and protective footwear.

A project-specific risk assessment and health and safety plan for the archaeological works will be provided by SLR prior to the commencement of fieldwork, to be read acknowledged and implemented by all staff on site

A First-Aid kit and Accident Book will be kept on site at all times.

3.0 Watching Brief

3.1 Aims and Objectives

3.1.1 Aims

- Identify, investigate, understand, record, and report the extent, nature and significance of any surviving archaeological remains within the excavated area.

3.1.2 Objectives

- Ensure that the watching brief area is stripped to the optimum level for the identification of archaeological features, but (subject to 3.2.1) no greater than that required for site construction;
- Identify and record an outline plan of all archaeological features present;
- Clean, excavate and record a sufficient sample of any features present to place on record and understand the nature, sequence, date and significance of the archaeological remains present within the excavated area; and
- Form an archive and report to be disseminated in an appropriate format as part of the wider reporting of archaeological works on the project.

3.2 Methodology

3.2.1 Mechanical Removal of Topsoil and Subsoil

The topsoil and any other masking deposits will be removed from the watching-brief areas by machine down to the first archaeologically significant deposits or the top of the underlying naturally deposited strata, whichever is encountered first. Excavations will cease at the top of the formation level for the construction works where this would leave in situ overlying deposits of sufficient thickness to avoid subsequent rutting by plant tracking over the area which could disturb the level of known or potential buried archaeological features.

The machine to be used will be fitted with a toothless bucket in order to achieve a surface which is as flat and as spoil-free as practicable, and thus the optimum conditions for identifying and recording archaeological features or deposits.

The watching-brief areas will be inspected for archaeological features and visible evidence of site formation processes.

All machine-excavation will be carried out under archaeological supervision and the mechanical excavator and any other plant will not track on the exposed surfaces until archaeological features present have been fully investigated and recorded.

3.2.2 Field Investigation and Recording

If potential archaeological features or deposits of archaeological origin are present they will be defined by hand-cleaning as necessary, recorded in plan with spot-heights, and a sample of each feature / deposit hand-excavated stratigraphically under archaeological conditions. The excavated parts of the features will be recorded in written records and detailed drawings indicating numbered context boundaries, sediment texture and colour, and levels Above Ordnance Datum (AOD).

The selection of features for excavation will be sufficient to satisfy the aims and objectives of the excavation (see Section 3.1), as agreed with CA once the nature and extent of features have been defined. The sample may address all features where appropriate, or may exclude repetitive excavation of features of similar form and phase. Provisionally, the sampling policy may be as follows:

- 100% excavation of each sampled stake hole;
- 50% excavation of each sampled post hole or pit up to 1.5m diameter;
- minimum 25% excavation of each sampled pit above 1.5m diameter, to include one complete cross section to obtain the feature's profile;
- a minimum of 20% excavation of sampled linear features up to 5m in length;
- the sampling of longer features will be agreed with the CA once their full extent within the excavation area has been established.

Percentages referred to are those of the surface area of the feature which lies within the watching-brief area.

All archaeological deposits will be recorded using a pro-forma single context recording system, and fully cross-referenced.

The drawn record will comprise hand-drawn plans of the feature cuttings at a suitable scale, typically 1:20 or 1:50 and hand-drawn sections at 1:10 or 1:20. All these drawings will include locational information in the form of National Grid coordinates and levels AOD.

The general deposit-sequence within the watching-brief area will be recorded in written form and where appropriate in drawings of selected parts of sections.

A photographic record will be maintained comprising high-resolution digital images, with a supporting index, archived in accordance with the Chartered Institute for Archaeologists' (CIfA) guidelines for long term storage of digital media³.

3.2.3 Palaeoenvironmental Sampling

Palaeoenvironmental sampling will be undertaken in accordance with the project's aims and objectives under guidance of SLR's palaeoenvironmental specialist. Samples will be taken from those deposits considered to have potential (e.g. waterlogged deposits with good organic preservation, and securely stratified deposits) and in accordance with Historic England guidance⁴. These are normally expected to comprise bulk sediment samples of up to 40 litres.

Issues to be addressed in the sampling strategy would include feature function, chronological and intra-site spatial variation, and quality of preservation within the site sequence. It is anticipated that ecofacts will be limited to charred material due to the presumed dry and acidic conditions and light soils.

Palaeoenvironmental samples will be stored in sealable and robust containers.

A written, drawn and photographic record will be made of the sample, its context, and the purpose of the sample.

3.2.4 Artefacts

All artefacts will be labelled, packed and stored in appropriate materials and conditions to ensure that no deterioration occurs. All artefact processing/storage will be carried out in accordance with UKIC (United Kingdom Institute for Conservation) guidelines.

3.2.5 Treasure and Human Remains

Finds of treasure are governed by the Treasure Act 1996 (and as amended by the Treasure Designation Order 2002 No 2666). This Act replaced the common law of treasure trove in England, Wales and Northern Ireland, which was previously the only legal protection afforded to antiquities. Under the law of treasure trove, finds of

³ CIfA 2014: *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives*, passim.

gold or silver had to be reported to the coroner and could be declared treasure trove and the property of the Crown if they had been deliberately hidden with the intention of recovery and their owner, or heirs were unknown. The 1996 Act removed the need to establish that objects were hidden with the intention of being recovered, except in a very few cases; it sets out the precious metal content required for a find to qualify as treasure; and it extends the definition of treasure to include other objects found in archaeological association with finds of treasure. Six categories of object are now classed as treasure:

- any object other than a coin which is at least 10% silver or gold by weight and more than 300 years old;
- any coins that are at least 10% silver or gold by weight and come from a single find, provided the find contains at least two coins with a gold or silver content of at least 10%. The coins must be at least 300 years old at the time of discovery. Where finds consist of coins that are less than 10% gold or silver by weight, there must be at least 10 coins in the find and they must be at least 300 years old at the time of discovery for the find to be considered treasure;
- any object, of whatever, composition, that is found in the same place as, or that had previously been together with, another object that is treasure;
- any object (other than a coin), any part of which is base metal, which, when found is one of at least two base metal objects in the same find which are of prehistoric date;
- any object, (other than a coin) which is of prehistoric date, and any part of which is gold or silver; and
- any object that would previously have been treasure trove but does not fall within the specific categories given above.

The Act also introduces a Code of Practice for the voluntary recording of archaeological finds.

If any objects are recovered that are deemed to potentially qualify as treasure, the archaeological contractor will inform the client and consult with the CA to determine the object's status. Objects that qualify as treasure will be notified to the local coroner and finds liaison officer within fourteen days of discovery, in accordance with The Treasure Act 1996 Code of Practice and its amendment. The Treasure will initially be deposited with the Finds Liaison Officer.

Intentional non-reporting can lead to imprisonment for up to three months, a fine of up to £5,000 (level 5), or both. Occupiers and landowners have the right to be informed of finds of treasure from their land and that they will be eligible for any rewards.

Any human remains identified will be initially left in situ until the relevant authorities have been informed of the discovery and any necessary licenses arranged, in accordance with the provisions of Section 25 of the Burial Act of 1857.

The remains will then be archaeologically excavated and recorded according to ClfA guidance⁵. Storage, analysis and reburial will be undertaken as appropriate.

⁵ Chartered Institute for Archaeologists 1993: J McKinley and C Roberts, *Excavation and Post-Excavation Treatment of Cremated and Inhumed Human Remains* (ClfA Technical Paper 13)

4.0 Report

After the completion of the fieldwork a formal archive and report will be prepared. The report will contain the following elements:

- a non-technical summary;
- a table of contents;
- an introduction with acknowledgements, including a list of all those involved in the project and location and description of the watching-brief area;
- a statement of the project aims;
- an account of the project methodology undertaken, with an assessment of its effectiveness in the light of the results;
- a brief summary of the archaeological/historical background of the area, indicating past and present land use, accompanied by relevant maps;
- an overall location map of the fieldwork area(s);
- descriptions of the area(s) of archaeological work, and any archaeologically significant features/deposits or potential features/deposits identified within each area;
- a discussion of the location, nature, extent, date, quality, condition and significance of any archaeological deposits/features uncovered;
- digital colour images of work in progress and significant features;
- a detailed plan of each area of archaeological work showing its location in relation to the National Grid, spot-heights, features identified and areas of detailed investigation
- plans and section drawings of features and deposits at appropriate scales showing datums AOD and National Grid coordinates;
- other maps, plans, drawings and photographs as appropriate;
- a description of the finds and palaeoenvironmental samples collected including a description of the methodologies employed;
- spot-dating of features from finds;
- a statement on the presence or absence of material and an assessment of preservation;
- assessments of any artefacts and environmental samples collected during the site works;
- assessment by a specialist conservator of all artefacts considered vulnerable with a view to identifying any long-term storage issues;
- an interpretation of the finds including reference to any unusual or important features of the assemblage;
- an interpretation of the results with a statement of the significance of any identified archaeological features/sites on a local, regional and national scale;
- a bibliography of sources consulted and a supplementary bibliography of any sources identified, but not available for consultation; and
- an index to the project archive and a statement of its location/proposed repository.

Palaeoenvironmental work will be conducted by an appropriate subcontractor (or their own sub-contractors) in accordance with industry standard procedures.

SLR will take into account any observations on the content of the draft report made by the Client and the CA before the final version is issued.

Digital copies in PDF/A format will be provided to the Client, the CA and the local Historic Environment Record.

A summary note or report, with a level of detail proportionate to the significance of the findings, will be offered for publication to the *Transactions of the Thoroton Society*, within twelve months of completion of the fieldwork. Alternatively, should results merit it a report would be offered to a regional or national journal, as appropriate. This may require a more extended programme.

5.0 Archive

5.1 Material Archive

The project archive might consist of all original records, artefacts, ecofacts/samples and all documentation that relates to the archaeological works. The archive will be prepared with reference to The Management of Archaeological Projects (English Heritage, 1991 second edition (MAP2)). SLR in conjunction with the CA would jointly endeavour to persuade the legal owner of the artefacts to transfer ownership to a relevant repository.

The archive will comply with the United Kingdom Institute for Conservation (Archaeology Section) Guidelines for the Preparation of Excavation Archives for Long-Term Storage (1990), and the Society of Museum Archaeologists Towards an Accessible Archaeological Archive (1995), and to the reasonable requirements of the recipient Museum or approved repository. A sample of digital photographs would be kept as hard copy using Canon printer/inks and Chromalife 100 paper which would last for 100 years. Technical standards for this can be found at CEN/TC346 European Standards for Conservation Work.

In accordance with Section 4 of *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation* Archaeological Archives Forum 2007 (revised 2011) a rigorous process of selection and discard in association with the museum will be followed so that only those elements that are considered of significance for potential future study would be retained. Bulk items such as ceramic building materials, stonework, large quantities of undiagnostic pottery, and material that is difficult and costly to conserve such as worked wood, may be selected for discard once appropriate recording and analysis has been undertaken, on site or in the laboratory post-excavation.

While the client may retain the artefacts recovered, the non-artefactual component of the archive as a minimum will be offered to the destination museum for permanent storage within two years of the completion of the site works.

The archive will be prepared according to procedures for the transfer of archaeological archives on completion of each fieldwork stage. Temporary storage pending deposition would be with SLR for a period of up to five years after which responsibility for its maintenance would cease; should no repository agree to take the material within this time period, it would be returned to the client or some alternative option applied.

5.2 Digital Archive

The Guidelines for the Preparation of Excavation Archives for Long-term Storage (UKIC, 1990), and Standards in the Museum Care of Archaeological Collections (Museum and Galleries Commission 1992) will be followed.

The archive will be fully indexed and contain:

- all 'born-digital' data such as images, survey data, digital correspondence and site data collected digitally; and
- digital copies of:
 - field records including potentially:
 - site notebooks/diaries;
 - photographs and photograph record sheets;
 - drawings and drawing record sheets;
 - context records;
 - original finds records;
 - all post-fieldwork records including potentially:
 - records of conservation and radiographs taken;

- sample records;
- other records including copies of correspondence relating to fieldwork;
- contractor's survey reports (e.g. borehole, geophysical, documentary); and
- reports as issued.

The digital archive will be deposited with the Archaeology Data Service (ADS) within two years of the completion of the work. The digital archive will be compiled in accordance with the standards and requirements of the ADS⁶.

SLR Consulting Ltd will inform the regulatory authority upon the deposition of the digital archive with the ADS.

5.3 Copyright

SLR will retain full copyright of any commissioned reports, tender documents or other project documents, under the Copyright, Designs and Patents Act of 1988 with all rights reserved; the contractor will provide an exclusive licence to the Client for the use of such documents by the Client in all matters directly relating to the project as described in this Project Design.

⁶<http://archaeologydataservice.ac.uk/advice/guidelinesForDepositors>
and <http://archaeologydataservice.ac.uk/advice/selectionGuidance>

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