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DESK BASED ASSESSMENTS
ARCHAEOLOGICAL EVALUATION
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GEOPHYSICAL SURVEY
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HISTORIC BUILDING RECORDING
EIA AND HERITAGE CONSULTANCY

UKEG CLAY CROSS LTD

ARCHAEOLOGICAL EVALUATION ON LAND AT ST HELENS LANE, WORKINGTON, CUMBRIA TO DISCHARGE CONDITION 7 OF PLANNING APPLICATION 2/2015/0593

December 2015

wardell armstrong
archaeology

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UKEG CLAY CROSS LTD

Land at St Helens Lane, Workington, Cumbria

Archaeological Evaluation

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Assistant Project Supervisor	Post Excavation Manager	Technical Manager

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SUMMARY

Wardell Armstrong Archaeology (WAA) was commissioned by UKEG Clay Cross Ltd, to undertake an archaeological evaluation by trial trenching on land off St Helens Lane, Workington, Cumbria (NGR: NY 0160 3203). The evaluation was required as a condition of planning consent. The evaluation was undertaken in accordance with a written scheme of investigation (WSI) produced in response to a advice given by Jeremy Parsons acting as the archaeological planning advisor on behalf of Cumbria County Council Historic Environment Services (CCCHES).

Seven trenches were opened in the proposed development area, all of which were targeting geophysical anomalies. No archaeological features or artefacts were seen, and the anomalies seen on the geophysics were likely to be geological in nature.

ACKNOWLEDGEMENTS

Wardell Armstrong Archaeology (WAA) thanks UKEG Clay Cross Ltd for commissioning the project, and for all their assistance throughout the work. Also, WAA thank Jeremy Parsons, at CCCHES for their assistance.

Wardell Armstrong Archaeology also thanks the contractor company UKEG Clay Cross Limited, and Jason Lowdon who provided the machine, for their help during this project.

The evaluation was supervised by Ruby Neale who also wrote the report. The project was managed by Frank Giecco and the report was edited by Richard Newman, Post Excavation Manager.

1. INTRODUCTION

1.1 Project Circumstances and Planning Background

1.1.1 In December 2015, Wardell Armstrong Archaeology (WAA) undertook an archaeological evaluation on land off St Helens Lane, Workington, Cumbria (NGR: NY 0160 3203). It was commissioned by the Client who intends to turn the field into part of a solar farm, for which a planning consent has been applied for (planning reference: 2/2015/0593).

1.1.2 The planning condition was in line with advice provided to Allerdale Council by Jeremy Parsons of CCCHES in a letter dated 09 December 2015 (ref no. JNP/2150593).

1.1.3 The proposed development is in close proximity to a possible prehistoric enclosure and known Roman forts lie within 4km of the site. The site itself contains a post-medieval mine entrance and St Helens colliery, the heritage significance of which may be affected by the application.

1.2 Project Documentation

1.2.1 The project conforms to a brief which was prepared in consultation with the Jeremy Parsons of CCCHES. A WSI (WAA 2015) was then produced to provide a specific methodology based on the brief for a programme of archaeological trial trench evaluation. This was approved by the archaeological planning advisor prior to the fieldwork taking place. This is in line with government advice as set out in Section 12 of the National Planning Policy Framework (NPPF 2012).

1.2.2 This report outlines the work undertaken on site, the subsequent programme of post-fieldwork analysis, and the results of this scheme of archaeological evaluation.

2. METHODOLOGY

2.1 Standards and guidance

2.1.1 The archaeological evaluation was undertaken following the Chartered Institute for Archaeologists *Standard and Guidance for archaeological field evaluation* (2014a), and in accordance with the WAA fieldwork manual (2012).

2.1.2 The fieldwork programme was followed by an assessment of the data as set out in the *Standard and Guidance for archaeological field evaluation* (CIfA 2014a) and the *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* (CIfA 2014b).

2.2 Documentary Research

2.2.1 An archaeology and cultural heritage assessment was prepared by Wardell Armstrong LLP (2015), which set out the archaeological and historical background of the site, and provided an assessment of the significance of all known and potential heritage assets up to 5km from the area of investigation.

2.3 The Field Evaluation

2.3.1 The evaluation comprised the excavation of seven trenches measuring between 15m and 30m in length by 1.5m in width across the proposed development area that measured 14.15ha. The trenches were placed to target a series of possible features recorded during the previous geophysical survey (WAA 2015). The general aims of these investigations were:

- to establish the presence/absence, nature, extent and state of preservation of archaeological remains and to record these where they were observed;
- to establish the character of those features in terms of cuts, soil matrices and interfaces;
- to assess the impact of the application on the archaeological site;
- to recover artefactual material, especially that useful for dating purposes;
- to recover palaeoenvironmental material where it survives in order to understand site and landscape formation processes.

And specifically to:

- investigate and record potential archaeological deposits and features of archaeological interest within the areas the current development highlighted by the geophysical survey

2.3.2 Deposits considered not to be significant were removed by a 360˚ tracked mechanical excavator with a toothless ditching bucket, under close archaeological supervision. The trial trenches were subsequently cleaned by hand. All possible features were inspected and selected deposits were excavated by hand to retrieve artefactual material and environmental samples. Once completed all features were recorded according to the WAA standard procedure as set out in the Excavation Manual (WAA 2012).

2.3.3 All finds encountered were retained on site and returned to the Carlisle office where they were identified, quantified and dated to period. A *terminus post quem* was then produced for each stratified context under the supervision of the WAA Finds Officer, and the dates were used to help determine the broad date phases for the site. On completion of this project, the finds were cleaned and packaged according to standard guidelines (Ibid). Please note, the following categories of material will be discarded after a period of six months following the submission of this report, unless there is a specific request to retain them (and subject to the collection policy of the relevant depository):

- unstratified material;
- modern pottery;
- material that has been assessed as having no obvious grounds for retention.

2.3.4 On completion the evaluation trenches were reinstated by replacing the excavated material.

2.3.5 A full professional archive has been compiled in accordance with the project specification, and the Archaeological Archives Forum recommendations (Brown 2011). The archive will be deposited with Whitehaven Archives, with copies of the report sent to the Cumbria HER, available upon request. The archive can be accessed under the unique project identifier WAA16, SHL-A, CP11612/2015.

2.5.2 Wardell Armstrong Archaeology supports the Online AccesS to the Index of Archaeological InvestigationS (OASIS) project. This project aims to provide an on-line index and access to the extensive and expanding body of grey literature, created as a result of developer-funded archaeological work. As a result, details of the results of this project will be made available by WAA as a part of this national project. The OASIS reference for the project is: **wardella2-234674**.

3. BACKGROUND

3.1 Location and Geological Context

3.1.1 The site is located at (NGR: NY 0160 3203.). The site's environs comprise a large field used for pastoral farmland, which is also bounded on all sides by pastoral fields. The study area lies just south of Flimby and approximately 5km North of Workington, close to the west Cumbrian coastline. The area of investigation lies at a height of 46.31m aOD (above Ordnance Datum) with the ground sloping down gently to the west.

3.1.2 The site is approximately 14.15ha in size and consists of open grassland used as pasture. In the centre of the field is a large mound which is the capped entrance to a coal mine.

3.1.3 The underlying solid geology within the area of investigation is mapped as mudstone, siltstone and sandstone of the Pennine Middle Coal Measures formation, deposited during the Carboniferous period 309 to 312 million years ago under swampy conditions, or because of estuaries or deltas. This is overlain by superficial deposits of Devensian Till of the Diamicton group deposited 2 million years ago during the Quaternary period (BGS 2015). The natural substrate observed during the current phase of works comprised of an orange brown clay with some gravel inclusions which is consistent with the mapped geologies above.

3.2 Historical and Archaeological Background

3.2.1 An archaeology and cultural heritage assessment was produced by Wardell Armstrong LLP (2015) to summarise the known historical and archaeological background of the site and the surrounding landscape. It is not intended to repeat that information here and what follows is a brief overview, for further details please refer to the original document.

3.2.2 This report identified that there were no designated heritage assets within the site boundary, however there are nine scheduled monuments, one Grade I listed building, ten grade II* listed buildings and one Registered Parks and Gardens within the wider search area of 5km. This search area also includes part of the Hadrian's Wall World Heritage site, which both the Roman forts of Maryport and Barrow Walls form a part.

3.2.3 No heritage assets designated as scheduled ancient monuments are recorded within the immediate vicinity of the site.

3.2.4 There in one non-designated heritage asset recorded within the immediate vicinity of

the site, St Helens Colliery (HER reference 10973). The impact to this asset was considered minor to moderate.

3.2.5 A geophysical survey was undertaken within the development area. The results of this survey suggested that there were a few anomalies which may have been archaeological in nature, thus dictating where the present trenches would be located.

3.2.6 Approximately 460m to the north-west of the development area an archaeological watching brief was undertaken for a cycle route along Cemetery House Track, which is considered to be a Roman road (HER reference 16695). No archaeological deposits or artefacts were recorded.

3.2.7 **Prehistoric (up to c.AD 43)**: There are no recorded prehistoric remains within the development area. A circular cropmark enclosure known as Eaglegill is recorded to the east of the site and is considered to be prehistoric (HER reference 44124)

3.2.8 **Roman (c.AD43-c.410)**: The Roman fort if *Alvana* lies 3.8km to the north, a key part of the defences on the Cumbrian coast, with Burrow Walls Roman fort lying 2.21km to the south west. The presence of two Roman forts suggests that the wider area was likely settled during the Roman period. A quern stone (HER reference 805) found in Totter Gill, to the south-west of the site, would attest to this theory. As well as this, a possible Roman road is recorded to the north-east of the site, known as Cemetery House Track (HER reference 16695).

3.2.9 **Early Medieval (c.410-1066)**: There is no recorded evidence for early medieval activity in the immediate vicinity of the site, though St Michael's Church in nearby Workington is built upon the site of an early medieval church.

3.2.10 **Medieval (1066-1485)**: The village of Flimby, 1.2km to the north is home to Flimby manor, which is recorded as belonging to Orme, son of Ketell during the medieval period. In 1279, the manor was given to the abbey of Holm Coultram by Gospatric, son of Orme. Henry VIII granted the village of Flimby to Thomas Dalston of Carlisle after the reformation (WAA 2015). The proposed development site lies outside the village and was therefore likely to be part of an open field system during the medieval period. Ridge and furrow earthworks are visible in nearby fields, and on the geophysical results.

3.2.11 **Post-medieval to Modern (1485-present)**: Hodgekinson and Donald's map of Cumberland (1770) indicates the village of Flimby is shown as being made up of a few houses, including a house close to the development area known as Coin House. Green

wood's map of Cumberland in 1823 shows Flimby had expanded with a number of new roads providing better access.

3.2.12 From the 17th century onwards, exploitation of the coal measures found in West Cumbria brought economic change to the area. These exploits were on an industrial scale and coastal ports with attached planned towns were established along the coast such as at Maryport. St Helens Colliery was located immediately to the north of the site (HER reference 10973). The First Edition Ordnance Survey map of 1867 shows the proposed development area subdivided into three fields, with the colliery to the north. A quarry is depicted on the north side of the proposed development area. A tramway (HER reference 5466), which served the colliery, was in operation in *c*.1740 and ran up to the Whitehaven Junction Railway to the west of the site (HER reference 43833), which then carried the coal on to Workington. In association with St Helens Colliery was an air shaft (HER reference 10964), which lies within the centre of the site. This is marked as a 'chimney' on the 2nd and 3rd edition Ordnance Survey maps of 1900 and 1925. A rectangular feature is also depicted to the southeast. The Coal Authority records at least four coal shafts within the northern half of the proposed development area, including the air shaft (HER reference 10964).

4. ARCHAEOLOGICAL EVALUATION RESULTS

4.1 Introduction

4.1.1 The evaluation was undertaken on the 14th and 15th December 2015, with 7 trenches excavated across the proposed development site (Figure 2). The trenches were placed to target a series of possible features recorded during the previous geophysical survey (WAA 2015).

4.2 Results

4.2.1 **Trench 1** (Plate 1) was situated towards the north eastern boundary of the proposed development area, and was placed to target an area of disturbance on the geophysical survey.

4.2.2 The trench was aligned north-west to south-east and was 1.5m wide and 30m long. The natural substrate, an orange brown clay, was seen at a maximum depth of 0.45m. This was cut by four modern land drains, one of which was stone filled. Other than these land drains, no features were identified in this trench. The natural substrate was sealed by the topsoil, a moderately firm, brown, clay sand. No archaeological explanation for the geophysical anomaly was seen, therefore the anomaly was likely due to some small changes in the geology of the natural substrate.

4.2.3 **Trench 2** (Plate 2) was opened just to the south of trench one, and was also positioned to investigate an anomaly seen on the geophysical survey.

4.2.4 Trench 2 was aligned north-west to south-east and was 1.5m wide by 30m long. The natural substrate was a compact reddish brown clay with patches of gravel throughout. This was seen at a maximum depth of 0.4m, and was sealed by the topsoil, a brown clay sand. Three modern land drains were observed in trench 2. No archaeological features were found, therefore the geophysical anomaly was likely to be geological.

4.2.5 **Trench 3** (Plate 3) was located to the south-west of trench 2 and was aligned east to west.

4.2.6 The trench was 30m in length by 1.5m in width. The natural substrate was exposed to a maximum depth of 0.6m, and was a compact reddish brown clay with slightly sandy patches throughout. This was cut by two modern land drains. The moderately compact brown clay sand topsoil overlay this. There were no archaeological features within this trench.

4.2.7 **Trench 4** (Plate 4) was opened to the south of trench 3 and was positioned to investigate an area of disturbance on the geophysics.

4.2.8 The trench was 30m in length by 1.5m in width. The natural substrate was exposed at a maximum of 0.45m and was a compact reddish brown clay with some areas of slightly more sandy material. Three modern land drains were identified and the brown clay sand topsoil overlay the trench. No archaeological features were identified in this trench. The geophysical anomalies were likely to have been caused by the geological changes in the natural substrate.

4.2.9 **Trench 5** (Plate 6) was opened near the north-eastern edge of the field, to the south west of trenches 1 to 4. Trench 5 was positioned investigate a possible circular anomaly seen on the geophysics which was interpreted as a possible ring ditch.

4.2.10 The trench measured 30m in length and 1.5m in width. The natural substrate, a compact orange brown clay, was seen at a maximum depth of 0.5m. A change in the natural was observed at the south-western end of the trench, a grey brown clay with frequent cobbles. This may explain the geophysical anomaly, as no archaeological features were seen in this trench. A thin layer of compact mid brown sandy clay subsoil overlay the natural and was sealed by the topsoil, a compact brown sandy clay.

4.2.11 **Trench 5A** (Plate 5) was located perpendicular to trench 5 and was also positioned to investigate the circular feature seen on the geophysical survey.

4.2.12 Trench 5A was very similar to trench 5, with the natural substrate being exposed at a maximum depth of 0.5m. This was overlain by the compact greyish brown sandy clay subsoil and the compact brown sandy clay topsoil. There were no archaeological features observed in the trench.

4.2.13 **Trench 6** (Plate 7) was located in the south of the site, close to the south-eastern boundary of the field. This trench was positioned to investigate possible linear anomalies on the geophysics results.

4.2.14 The trench was aligned north-west to south-east and measured 15m in length and 1.5m in width. The natural substrate was a compact orange brown clay with occasional gravel inclusions, and was seen at a maximum depth of 0.45m. Two modern field drains were observed. The subsoil, a light brown sandy clay, overlay this and was sealed by the friable mid brown clay sand topsoil. There were no archaeological features observed in this trench. The possible linear features observed on the geophysics are likely geological in nature, or may possibly have been caused by the

field drains.

4.2.14 **Trench 7** (Plate 8) was located in the south-eastern part of the field, just north of trench 6. This trench was also positioned to investigate the linear geophysical anomalies.

4.2.15 The trench was aligned north-east to south-west and measured 15m in length by 1.5m in width. The natural substrate was observed at a maximum depth of 0.45m and consisted of a compact orange brown clay with occasional greyish brown patches. One modern field drain was identified at the north-eastern end of the trench. The subsoil overlay this, a light brown sandy clay, and was sealed by the topsoil which was a mid-brown sandy clay. No archaeological features were identified within this trench.

4.3 Archaeological Finds and Environmental Sampling

4.3.1 No archaeological finds were recovered, and no environmental samples were retained during the groundworks.

5. CONCLUSIONS

5.1 Interpretation

5.1.1 No archaeological remains were found in any of the trenches. The geophysical anomalies which the trenches were targeting are likely to be geological in nature, showing as changes in the natural within the trenches.

5.2 Significance

5.2.1 The proposed development contains no remains of archaeological significance.

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APPENDIX 1: TRENCH DESCRIPTIONS

Trench 1

Length: 30m Width: 1.6m Orientation: NW-SE

Average Depth: 0.37m Maximum Depth: 0.45m

Context Number	Context Type	Description	Height/Depth	Discussion
100	Topsoil	Moderately compact brown clay sand with minimal gravel inclusions.	0.3m	
101	Natural Substrate	Firm orange clay with occasional rounded gravels to cobbles throughout	N/A	Cut by four modern land drains.

Trench 2

Length: 30m Width: 1.6m Orientation: NW-SE

Average Depth: 0.35m Maximum Depth: 0.40m

Context Number	Context Type	Description	Height/Depth	Discussion
200	Topsoil	Moderately compact brown clay sand with minimal gravel inclusions.	0.25m	
201	Natural Substrate	Firm orange clay with occasional rounded gravels to cobbles throughout	N/A	Cut by three modern land drains. Some patches of gravel in random areas.

Trench 3

Length: 30m Width: 1.6m Orientation: east-west

Average Depth: 0.5m Maximum Depth: 0.6m

Context Number	Context Type	Description	Height/Depth	Discussion
300	Topsoil	Moderately compact brown clay sand with minimal gravel inclusions.	0.3m	
301	Natural Substrate	Firm orange clay with occasional rounded gravels to cobbles throughout	N/A	Cut by two modern land drains. Random areas of slightly more sandy clay.

Trench 4

Length: 30m Width: 1.6m Orientation: NW-SE

Average Depth: 0.35m Maximum Depth: 0.45m

Context Number	Context Type	Description	Height/Depth	Discussion
400	Topsoil	Moderately compact brown clay sand with minimal gravel inclusions.	0.3m	
401	Natural Substrate	Firm orange clay with occasional rounded gravels to cobbles throughout	N/A	Cut by three modern land drains. Random areas of slightly more sandy clay.

Trench 5

Length: 30m Width: 1.6m Orientation: NE-SW

Average Depth: 0.42m Maximum Depth: 0.5m

Context Number	Context Type	Description	Height/Depth	Discussion
500	Topsoil	Moderately compact brown clay sand with minimal gravel inclusions.	0.3m	
501	Subsoil	Compact mid brown sandy clay with occasional pebble inclusions	0.14	Very slight colour change from the topsoil.
502	Natural Substrate	Firm orange clay with occasional rounded gravels to cobbles throughout. Natural changes to compact grey brown clay with frequent gravels in SW end.	N/A	Cut by two modern land drains. Change in natural may explain geophysical anomalies.

Trench 5A

Length: 10m Width: 1.5m Orientation: NW-SE

Average Depth: 0.45m Maximum Depth: 0.5m

Context Number	Context Type	Description	Height/Depth	Discussion
500	Topsoil	Moderately compact brown clay sand with minimal gravel inclusions.	0.25m	
501	Subsoil	Compact mid brown sandy clay with	0.14	Very slight colour change from the topsoil.

		occasional pebble inclusions		
502	Natural Substrate	Firm orange clay with occasional rounded gravels to cobbles throughout.	N/A	Cut by one modern land drain.

Trench 6

Length: 15m Width: 1.5m Orientation: NW-SE

Average Depth: 0.40m Maximum Depth: 0.45m

Context Number	Context Type	Description	Height/Depth	Discussion
600	Topsoil	Friable brown clay sand with minimal gravel inclusions.	0.2m	
601	Subsoil	Compact mid brown sandy clay with occasional pebble inclusions	0.13	Very slight colour change from the topsoil.
602	Natural Substrate	Firm orange clay with occasional rounded gravels to cobbles throughout. Some slightly more grey patches towards the SE of the trench.	N/A	Cut by two modern land drains. Change in natural may explain geophysical anomalies.

Trench 7

Length: 15m Width: 1.5m Orientation: NE-SW

Average Depth: 0.40m Maximum Depth: 0.45m

Context Number	Context Type	Description	Height/Depth	Discussion
700	Topsoil	Friable brown clay sand with minimal gravel inclusions.	0.2m	
701	Subsoil	Compact mid brown sandy clay with occasional pebble inclusions	0.13	Very slight colour change from the topsoil.
702	Natural Substrate	Firm orange clay with occasional rounded gravels to cobbles throughout. Some slightly more grey patches towards the SW of the trench.	N/A	Cut by one modern land drain. Change in natural may explain geophysical anomalies.

APPENDIX 2: PLATES

Plate 1: Trench 1 from north-east end

Plate 2: Trench 2 from the south-west end

Plate 3: Trench 3 from eastern end

Plate 4: Trench 4 from south-west end

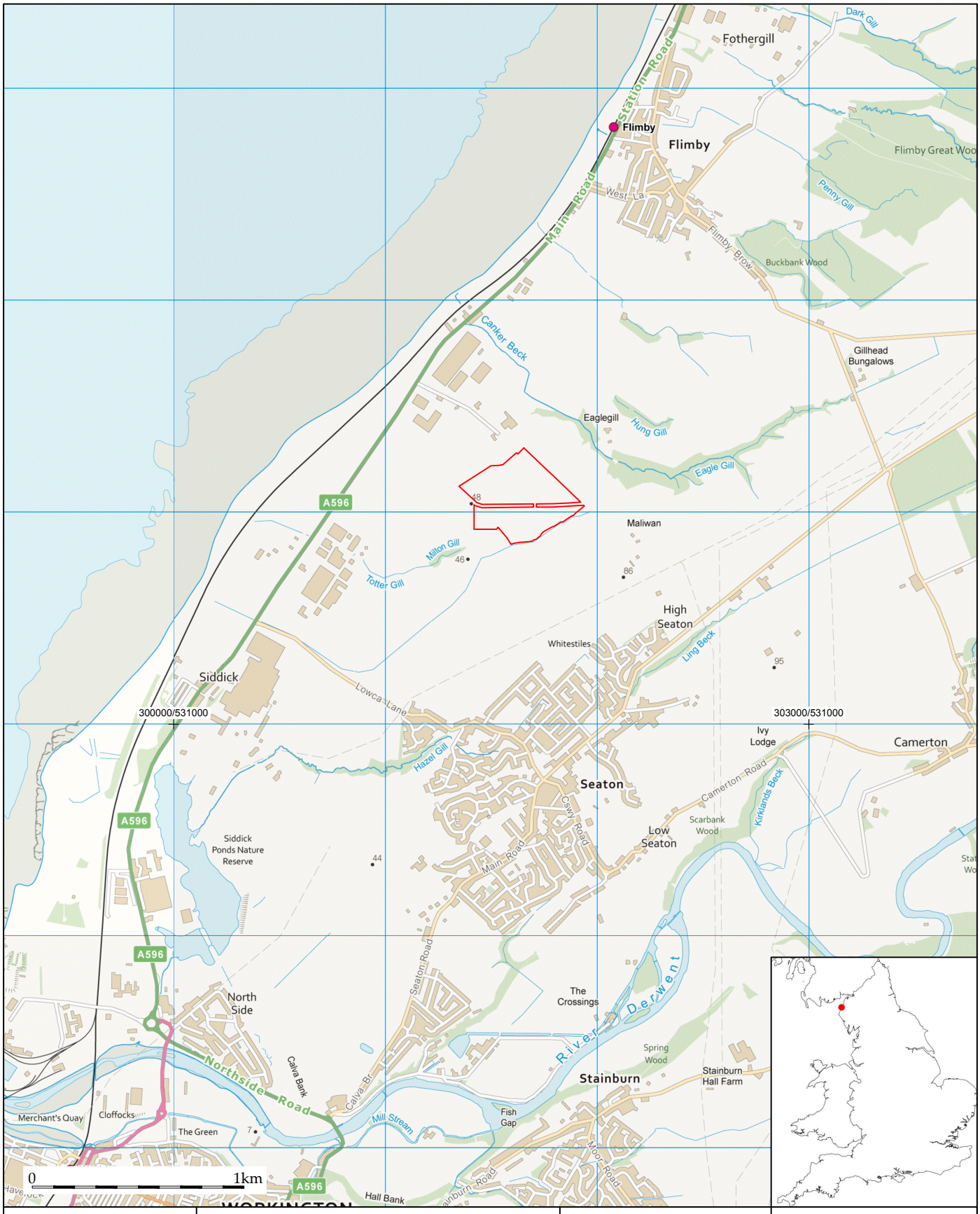
Plate 5: Trench 5A from the north-west end

Plate 6: trench 5 from the south-west end

Plate 7: trench 6 from the south-east end

Plate 8: trench 7 from the north-east end

APPENDIX 3: FIGURES



PROJECT:	Solar Farm, St Helens Lane, Workington
SCALE:	1:25,000 at A4
REPORT No:	CP11612
CLIENT:	UKEG Clay Cross Limited
DRAWN BY:	AB
DATE:	December 2015
FIGURE:	1

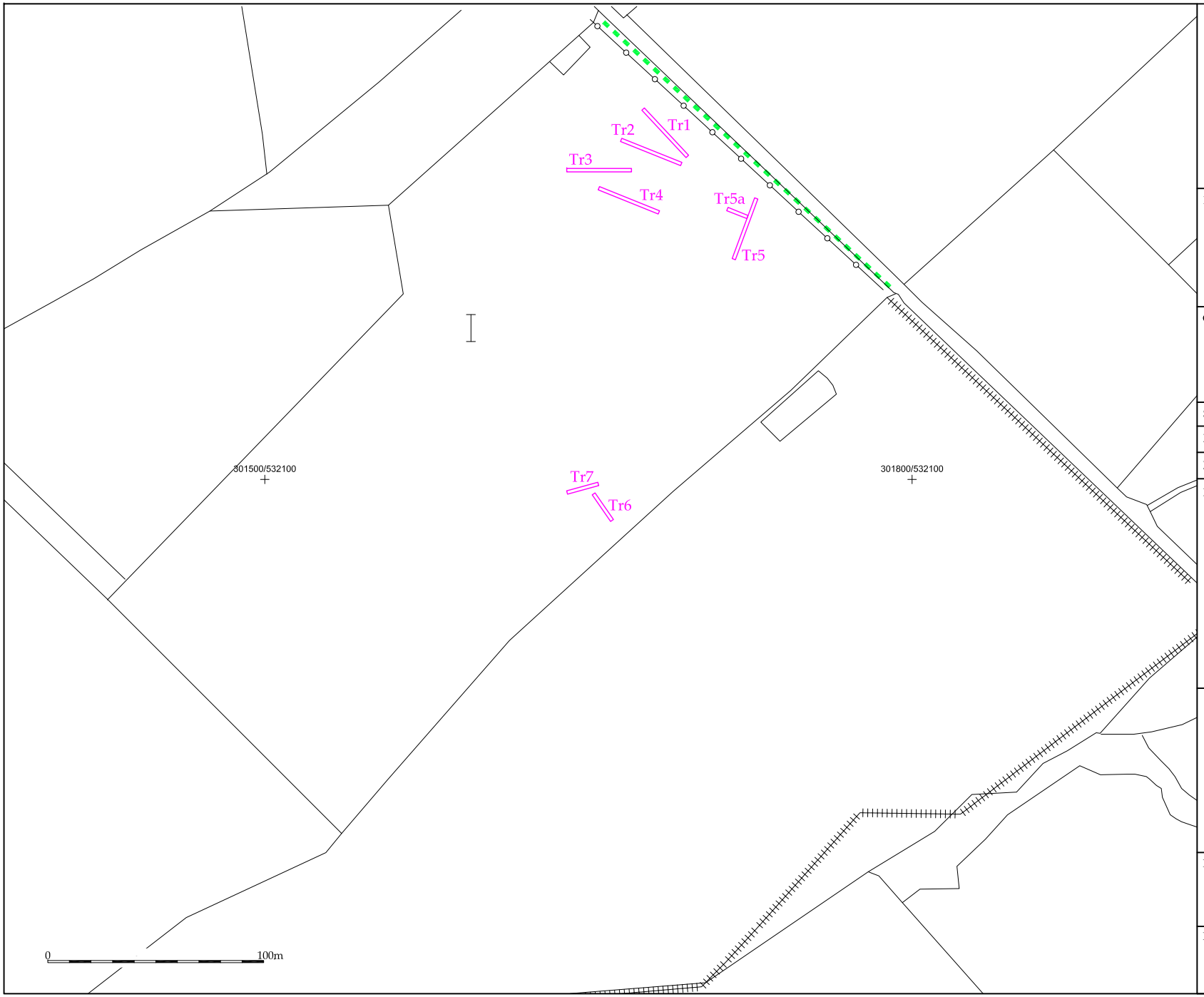
KEY:

Site boundary

wardell armstrong archaeology

Wardell Armstrong Archaeology 2015

Figure 1: Site Location.



Wardell Armstrong Archaeology 2015

PROJECT:

Solar Farm, St Helens Lane, Workington

CLIENT:

UKEG Clay Cross Limited

SCALE: 1:2,500 at A4

DRAWN BY: AB

DATE: December 2015

KEY:

Evaluation trenches

REPORT No: CP11612

FIGURE: 2

Figure 2: Evaluation trench location plan.

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