

Cotswold Archaeology

Weston Airfield Weston-Super-Mare North Somerset

Archaeological Excavation



for Persimmon Homes (Severn Valley) Ltd

CA Project: 5519 CA Report: 15737

November 2015



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SUMMARY

Project Name:	Weston Airfield
Location:	Weston-Super-Mare, North Somerset
NGR:	ST 3441 6042
Туре:	Excavation
Date:	20 July to 4 September 2015
Planning Reference:	North Somerset ref 10/P/0756/OT2
Accession Number:	WESTM:2015.20
Location of Archive:	Somerset Heritage Centre
Site Code:	WAIR 15

An archaeological excavation was undertaken by Cotswold Archaeology between July and September 2015 at Weston Airfield, Weston-Super-Mare, North-Somerset. The excavation comprised three areas, of which two targeted possible palaeochannels identified through previous geophysical and LiDAR surveys of the site.

A network of field drains was identified throughout each of the three excavation areas. Of potentially post-medieval, or even medieval, origin these had later been infilled and levelled with gravel, with modern ceramic and concrete drainage pipes inserted, probably during construction of the airfield and aircraft factory in the 1940s. No artefactual material was recovered. The possible palaeochannels were not identified during the excavation, and the features detected by previous surveys proved instead to be the result of land-raising deposits of modern origin, probably also associated with construction of the airfield and aircraft factory.

1. INTRODUCTION

- 1.1 Between July and September 2015, Cotswold Archaeology (CA) carried out an archaeological investigation at the request of Persimmon Homes (Severn Valley) Ltd, at Weston Airfield, Weston-Super-Mare, North-Somerset (centred on NGR: ST 3441 6042; Fig. 1).
- 1.2 Planning permission (Planning ref: 10/P/0756/OT2) for a mixed development of residential and commercial properties with associated infrastructure was granted by North-Somerset Council (NSC) conditional (Condition 40) on a programme of archaeological work, comprising an archaeological excavation targeted upon palaeochannels identified by a geophysical survey (GSB Prospection Ltd 2006). The archaeological condition was recommended by Vince Russett, County Archaeologist (NSC).
- 1.3 The excavation was undertaken in accordance with a detailed *Specification for Archaeological Mitigation (SFAM)* produced by CgMs (2012) and approved by NSC. The fieldwork also followed *Standard and Guidance: Archaeological Excavation* (CIfA 2014); the *Management of Archaeological Projects* (English Heritage 1991) and the *Management of Research Projects in the Historic Environment (MORPHE): Project Manager's Guide* (English Heritage 2006). It was monitored by Vince Russett, including a site visit on 30 July 2015.

The site

- 1.4 The development site as a whole is approximately 490ha in extent and is located on the western outskirts of Weston-Super-Mare bounded by the A370 to the north, Winterstoke Road to the west, the A371 to the east and Cross Rhyne and agricultural land to the south. The site comprises fields within a road system determined in part by the layout of the former airfield. To the southeast are industrial units and former aircraft hangers (see Fig. 2). The site lies at approximately 6m AOD and is relatively level.
- 1.5 The underlying geology is mapped as Mercia Mudstone Group, mudstone and halite-stone of the Triassic Period, with Superficial Tidal Flat Deposits of clay, silt and sand of the Quaternary Period (BGS 2015). Tidal Flat Deposits, consisting of clay with rare sets of fine sand, were encountered during the excavation.

2. ARCHAEOLOGICAL BACKGROUND

- 2.1 The archaeological background is summarised in Environmental Statement Chapter 7 (CgMs 2010), geophysical survey report (GSB (GSB) Prospection Ltd 2004), and a watching brief of geotechnical pits (Wessex Archaeology (WA) 2006). Below is a brief summary of the salient points.
- 2.2 The Environmental Statement concluded that the site contained the potential for previously unrecorded field systems and farmsteads of Roman origin, as well as later post-medieval field systems (with potential medieval origins), to be present. The earliest mapping of the area, from the first quarter of the 19th century, shows the area as drained land next to Weston Moor, and in the early Victorian period it was heavily drained land utilised as pasture. Construction of a municipal airport at the site commenced in 1936, and the airfield transferred to the RAF in 1940, with the aircraft factory and concrete runway that occupied much of the proposed development area constructed around this time. Records show that the existing major water control features and drains were filled in at this time, and the Cross Rhyne constructed, to facilitate the connection of the aircraft factory, taxiing areas and runway (CgMs 2010).
- 2.3 Geophysical survey (GSB 2004) identified several possible ditches, ridge and furrow and indications of palaeochannels within the planning application area. LiDAR from the Environment Agency also appeared to support the potential for palaeochannels to be present (see Fig. 2).
- 2.4 A watching brief on geotechnical pits (WA 2006) excavated to a depth of 2.6m below present ground level (bpgl) identified no archaeological remains. It did however identify possibly undisturbed alluvial deposits that could contain archaeological deposits, as well as consolidation layers/drainage associated with the former airfield and helicopter factory.

3. AIMS AND OBJECTIVES

- 3.1 The objectives of the archaeological excavation were to:
 - record the nature of the main stratigraphic units encountered

- assess the overall presence, survival and potential of remains
- assess the overall presence, survival, condition, and potential of artefactual and ecofactual remains
- 3.2 The specific aims of the work were to set out in the preceding WSI (CgMs 2012). The salient points are summarised here:
 - To excavated three 1ha areas exposing the palaeochannels (where present) in plan and ascertain the presence/absence of other archaeologically significant features, artefacts and deposits
 - Previous geophysical survey results and a watching brief on Geotechnical pits (GSB 2004, WA 2006) did not identify any archaeological targets. Vince Russett has flagged up the palaeo-environmental potential of the possible palaeochannels. These areas along with a further control area will be stripped and mapped. Should no significant archaeological features deposits or artefacts be exposed focus will be on recovering information from the palaeochannels
 - No further archaeological investigation shall be undertaken outside these areas with the exception of a RCHME level II recording that is subject to a separate specification (CA 2015).

4. METHODOLOGY

4.1 The fieldwork followed the methodology set out within the WSI (CgMs 2012). The location of the excavation areas were agreed with Vince Russett (NSC) informed by the results of the geophysical survey (GSB 2004 and LiDAR data supplied by the Environment Agency (see Fig.2)). Three excavation areas measuring 100m by 100m was set out on OS National Grid (NGR) co-ordinates and scanned for live services by on site contractors prior to the commencement of archaeological works. Areas 2 and 3 were narrowed to avoid water courses. Four 2m wide trenched were excavated by machine across Areas 2 and 3. Area 1 was, in agreement with Vince Russett, abandoned having been partial stripped (see Figs 2 and 3). A geoarchaeological investigation was carried out in Areas 2 and 3 by ARCA (see Appendix C).

- 4.2 Fieldwork commenced with the removal of topsoil and subsoil from the excavation area by mechanical excavator with a toothless grading bucket, under archaeological supervision.
- 4.3 The archaeological features thus exposed were hand-excavated to the bottom of archaeological stratigraphy. All features were planned and recorded in accordance with CA Technical Manual 1: *Fieldwork Recording Manual*.
- 4.4 Deposits were assessed for their palaeoenvironmental potential in accordance with CA Technical Manual 2: *The Taking and Processing of Environmental and Other Samples from Archaeological Sites* but no deposits were identified that required sampling.

5. RESULTS (FIGS 3–6)

- 5.1 This section provides an overview of the excavation results; detailed summaries of the contexts are to be found in Appendix A. Area 1, which was designated as a control area with limited archaeological potential, was eventually excavated as a series of trenches, and then aborted, with the approval of Vince Russett, in light of negative archaeological results and persistent flooding (Fig. 3).
- 5.2 The natural geological substrate consisting of blue/grey alluvium was revealed in all areas at an average depth of 1m bpgl. This was overlain by a further orange/brown alluvium averaging 0.4m in thickness, which was in turn sealed by up to 0.5m of stone rubble and red aggregate consolidation or levelling deposit (Fig. 4) that fluctuated greatly in depth and coverage of all three areas. This was sealed by topsoil averaging 0.2m in depth.
- 5.3 All three excavation areas contained a network of largely southeast/northwest aligned field drains, each up to 4m in width and filled with a range of limestone boulders, red aggregate and gravel (Fig. 2 inset, and Fig. 5). Where an example was excavated (field drain 200), this contained silt, clay and organic fills, suggesting the drains had been in existence and silting up some time before they were filled with aggregate. The drains cut the upper alluvial layers and were sealed by topsoil. In many cases ceramic and concrete pipes were evident within the drains.

5.4 Four deeper 2m wide trenches were excavated through Areas 2 and 3 aligned northwest-southeast (Fig. 2, inset & Fig. 6). These were excavated, in the presence of an ARCA geoarchaeological specialist in order to investigate the possible palaeochannels previously identified. However the excavation failed to identify any palaeochannels, and the geophysical and LiDAR anomalies may instead be explained by the presence of extensive modern consolidation deposits. No features or deposits of archaeological interest were observed during groundworks and, despite visual scanning of spoil, no artefactual material was recovered.

6. DISCUSSION

- 6.1 Despite the archaeological potential of the application area (see archaeological background above) only a relatively modern drainage network was revealed.
- 6.2 The results of the excavation suggest that the anomalies previously identified as palaeochannels are instead related to modern consolidation and drainage alterations carried out at the site during the construction of the airfield and aircraft factory in the early 1940s (see *Archaeological Background*, Para 2.2 above). Some of these layers appear to follow in plan the route of the anomalies previously identified as potential palaeochannels.
- 6.3 The southeast/northwest field drainage network revealed across all three areas matches the pattern of that which can still be seen to the south of the Cross Rhyne (see Fig. 2, for example), and is consistent with the extensively drained pastureland recorded on historic mapping from at least the early 19th century onwards (see 2.2 above). Although undated, these may have post-medieval, or even medieval, origins, and a long existence is certainly suggested by the organic and silty fill sequence of undated field drain 200. The field drains were clearly seen to have been filled in with aggregate and ceramic or concrete pipes, which is likely to have happened during the construction of the airfield and aircraft factory which is attested to have taken place in the early 1940s (see 2.2 above).

7. CA PROJECT TEAM

7.1 Fieldwork was undertaken by Luke Brannlund, Jon Pick. The report was written by Luke Brannlund. The illustrations were prepared by Leo Heatley. The archive has

been compiled and prepared for deposition by Hazel O'Neill. The fieldwork and the post-excavation were managed for CA by Simon Cox.

8. STORAGE AND CURATION

8.1 The archive is currently held at CA offices in Kemble whilst post-excavation work proceeds. Upon completion of the project the site archive will be deposited with with Somerset Heritage Centre, which has agreed in principle to accept the complete archive upon completion of the project. A summary of information from this project, set out within Appendix B, will be entered onto the OASIS online database of archaeological projects in Britain.

9. **REFERENCES**

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- CA (Cotswold Archaeology) 2015 Bristol Aeroplane Company Ltd Factory, Weston-Super-Mare, North-Somerset: Historic Building Recording. CA Typescript report 15640
- Cgms Consulting 2012 Land at Weston Airfield, North-Somerset: Specification for Archaeological Mitigation

GSB Prospection Ltd 2006 Weston Airfield: geophysical survey

WA (Wessex Archaeology) 2006 Geotechnical Earthwork Trials Weston Airfield, Weston-Super-Mare, North-Somerset: Archaeological Watching Brief Report. WA Typescript report 64270.02

APPENDIX A: CONTEXT DESCRIPTIONS

Area	Context	Context	Fill of	Context
	Number	Туре		Description
1	100	Layer		Topsoil, mid grey-brown clay silt
1	101	Layer		Alluvium, mid grey-orange silt clay
1	102	Layer		Natural, grey-blue clay
1	103	Cut		Generic number for field drains
1	104	Fill	103	Generic fill for field drains, limestone
				boulders, red aggregate and gravel
2	200	Cut		Field drain, linear SE/NW aligned
				with shallow U-shaped profile
2	201	Fill	200	Field drain fill, dark brown-grey clay
2	202	Fill	200	Field drain fill, black peat and silt
2	203	Fill	200	Field drain fill, mid blue-grey clay
2	204	Layer		Topsoil, mid grey-brown
2	205	Layer		Consolidation layer, mid brown-red
				silt clay
2	206	Layer		Levelling layer, stone rubble
2	207	Layer		Consolidation layer, mid brown-red
				silt clay
2	208	Layer		Levelling layer, stone rubble
2	209	Layer		Levelling layer, stone rubble
2	210	Layer		Alluvium, mid orange-brown
2	211	Cut		Field drain
2	212	Fill	211	Fill of field drain, stone rubble
2	213	Layer		Natural, blue-grey clay
2	214	Cut		Generic number for field drains
2	215	Fill	214	Generic fill for field drains, limestone
				boulders, red aggregate and gravel
2	216	Layer		Natural, blue-grey clay
3	300	Layer		Alluvium, mid orange-brown
3	301	Layer		Natural, blue-grey clay
3	302	Cut		Field drain
3	303	Fill		Fill of field drain, stone rubble
3	304	Cut		Field drain
3	305	Fill		Fill of field drain, grey clay
3	308	Layer		Topsoil, mid grey-brown
3	309	Layer		Consolidation layer, mid brown-red
				silt clay
3	310	Layer		Alluvium, mid orange-brown
3	311	Layer		Natural, blue-grey clay
3	312	Cut		Generic number for field drains
3	313	Fill		Generic fill for field drains, limestone
				boulders, red aggregate and gravel
3	314	Layer		Natural, blue-grey clay

APPENDIX B: OASIS REPORT FORM

PROJECT DETAILS

Project Name	Weston Airfield	
Short description	An archaeological excavation was un Archaeology between July and Septembry Weston-Super-Mare, North-Somerset. There areas, of which two targeted identified through previous geophysical site.	er 2015 at Weston Airfield, The excavation comprised possible palaeochannels
	palaeochannels were not identified durir features detected by previous surveys result of land-raising deposits of mod associated with construction of the airfield	edieval, or even medieval, levelled with gravel, with e pipes inserted, probably rcraft factory in the 1940s. covered. The possible ng the excavation, and the proved instead to be the ern origin, probably also
Project dates	20 July to 4 September 2015	
Project type	Excavation	
Previous work	Geophysical Survey, GSB Prospection Li Archaeological Watching Brief, Wessex A	
Future work	Unknown	
PROJECT LOCATION		
Site Location	Weston-Super-Mare, North-Somerset	
Study area	Site: 490ha, Excavation area: 3ha	
Site co-ordinates (8 Fig Grid Reference) PROJECT CREATORS	ST 3441 6042	
	Cotowold Arobooology	
Name of organisation	Cotswold Archaeology North Somerset Council	
Project Brief originator Project Design (WSI) originator	CgMs	
	-	
Project Manager Project Supervisor	Simon Cox Luke Brannlund	
MONUMENT TYPE	None	
SIGNIFICANT FINDS	None	
PROJECT ARCHIVES	Intended final location of archive	Content
Physical	n/a	n/a
Paper	Somerset Heritage Centre, accession no. WESTM:2015.20	Context sheets, Trench sheets Permatrace drawings
Digital	Somerset Heritage Centre, accession no. WESTM:2015.20	Digital photos
BIBLIOGRAPHY		1
	ston Airfield, Weston-Super-Mare, North-	Somerset: Archaeological

APPENDIX C: GEOARCHAEOLOGICAL INVESTIGATION REPORT

Geoarchaeology

September 2015

Report Number: 1516-6

WESTON AIRFIELD, NORTH SOMERSET: GEOARCHAEOLOGICAL INVESTIGATION OF TWO PALAEOCHANNELS

Prepared for Cotswold Archaeology

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Version	Date	Status*	Prepared by	Author's signature	Approved by	Approver's Signature
01	29/09/15	F	Nick Watson			
*I – Inter	*I – Internal draft; E – External draft; F - Final					

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Summary

This report is a geoarchaeological assessment of two geophysical anomalies believed to be palaeochannels at Weston Airfield, Weston-Super-Mare, Somerset. Two one hectare areas were stripped by machine to c.1m below ground level in a vain attempt to identify the features in plan in the alluvium. The areas were then sectioned by machine to c.3m below ground level but no evidence could be found for the features.

1 INTRODUCTION

- On September 4th 2015, at the request of Cotswold Archaeology, 1.1 ARCA visited the Weston Airfield site centred on NGR ST 3441 6042, to supervise the excavation of two machine cut sections. sections were designed to locate These two potential palaeochannels that would then be recorded and any palaeoenvironmental material present sampled according to standard geological criteria (Tucker 2011; Jones et al. 1999; Munsell Color 2000). The sections were aligned to cut perpendicular to the long axes of the palaeochannels.
- 1.2 The two palaeochannels had originally been identified by GSB Prospection Ltd in 2004. They reported strong irregular anomalies in Area F in a gradiometer survey. These anomalies, described also as negative linear responses, were tentatively suggested to represent the courses of palaeochannels (Shiel 2004 p2). Prior work by Cotswold Archaeology had involved the machine stripping of two one hectare areas (Areas 2 and 3) of the site located over the palaeochannels. The intention here was to distinguish the modern land drains designed to free the airfield of standing water and most importantly locate the edges or banks and fill of the palaeochannels in plan.
- 1.3 The British Geological Survey (BGS) map the site as lying on superficial Tidal Flat Deposits laid down in the Holocene Epoch. They consist of blue grey clays and silts with fine sand layers and bands of peat. Within the catchment of the River Severn they are defined as the Wentlooge Formation, post glacial, soft, esturine mineral sediments (Allen and Scaife 2010 p5). Underlying these deposits is the Mercia Mudstone Group bedrock laid down in the Triassic Period 250 to 200 My BP.

2 RESULTS

2.1 The stratigraphy of the site was recorded as follows:

Depth m	Unit	Description
0-0.15	1	10 YR 4/2 Dark greyish brown silt/clay
		(Topsoil)
	1a	In large areas of the site a 2.5 YR 4/3
		Reddish brown gravel (modern crushed
		aggregate laid as a subbase to a thin turf
		often over land drains)

0.15-0.75	2	2.5 Y 5/1 Grey silt/clay with frequent 2.5 Y
		4/3 Olive brown mottles. (Post depositional
		oxidation due to fluctuating water levels).
		Gradual boundary to:
0.75-3.00	3	5 Y 4/1 Dark grey silt/clay. Rare sets of very
		fine sand horizontal laminations towards
		base of trench.
0.75-3.00	3	5 Y 4/1 Dark grey silt/clay. Rare sets of very fine sand horizontal laminations towards

Table 1. Description of the deposits.

2.2 The open area stripping back of Areas 2 and 3 to an approximate depth of 1m failed to reveal the presence of the palaeochannels. Modern land drains and pipes were uncovered cut into the top of the alluvium (Unit 2). The land drains were up to 1m wide and constructed of grey limestone boulders overlain by gravel and a red crushed aggregate that often spread several metres across the long axis of the drain (Figure 1). It was thought possible that this material could produce geophysical anomalies (Luke Brannlund pers.comm. September 2015). The top of the fine grained alluvium (0-0.75m, Unit 2) was mottled by iron oxide staining caused by fluctuating water levels after the deposit had been laid down.



Figure 1. Section through a large land drain showing crushed red aggregate (below topsoil) and grey limestone gravel that may have caused geophysical anomalies.

2.2 To investigate deeper stratigraphy and attempt to identify the palaeochannels in section – a more fruitful proposition than looking in plan – both areas were sectioned by trenches, machine cut perpendicular to the long axes of the palaeochannels (Figure 2). Inspection of trench sections failed to find the palaeochannels, rather there was nothing other than unremitting and homogenous grey blue silt/clay of the Wentlooge Formation (Figure 3).



Figure 2. General view of the site and the uniformity of the Wentlooge Formation alluvium.

2.3 Figure 3 gives a general view of the stratigraphy of the site to a depth of *c*.3m below ground level. A land drain is visible in the top right corner. Towards the base of the section rare sets of horizontal laminations composed of very fine sand were present and are consistent with deposition under a tidal regime.



Figure 3. c. 3m section of the Wentlooge Formation deposits (Tidal Flat Deposits).

3 CONCLUSIONS

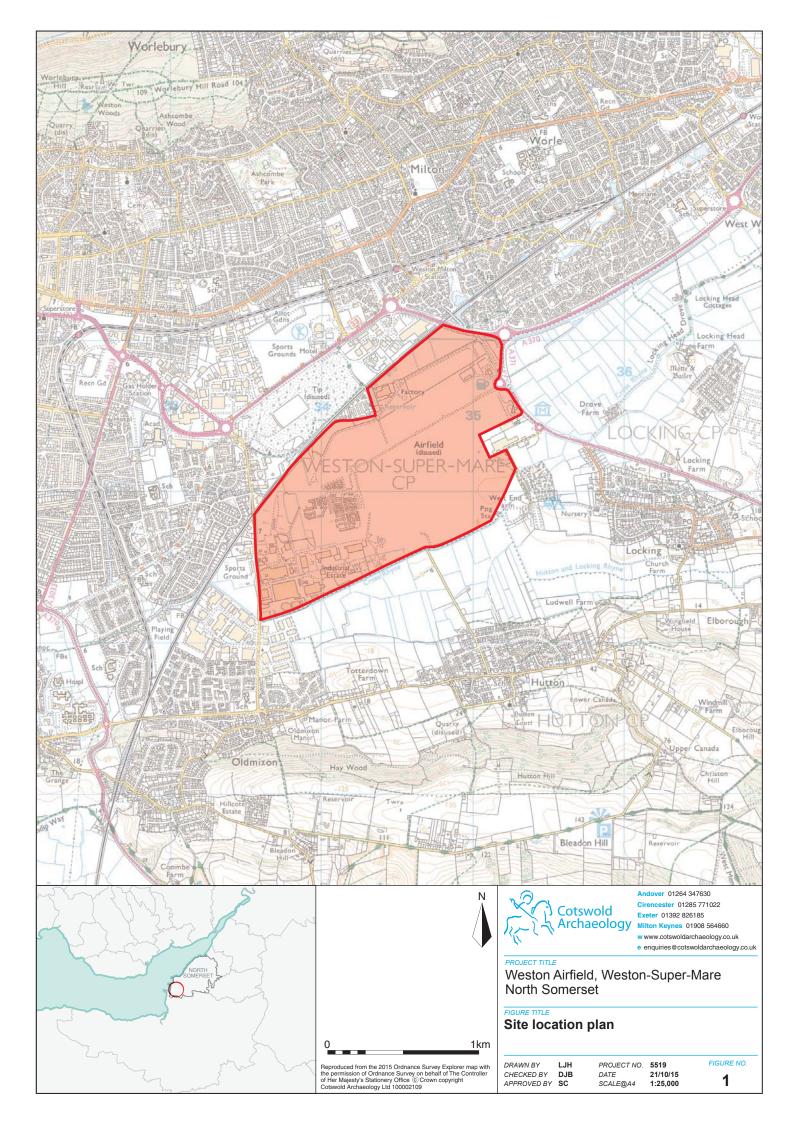
3.1 The two features tentatively identified as palaeochannels in the geophysical survey were not found either in plan or section. On the day of the visit no premodern features were identified, either archaeological or palaeoenvironmental, within the alluvial sequence at the site.

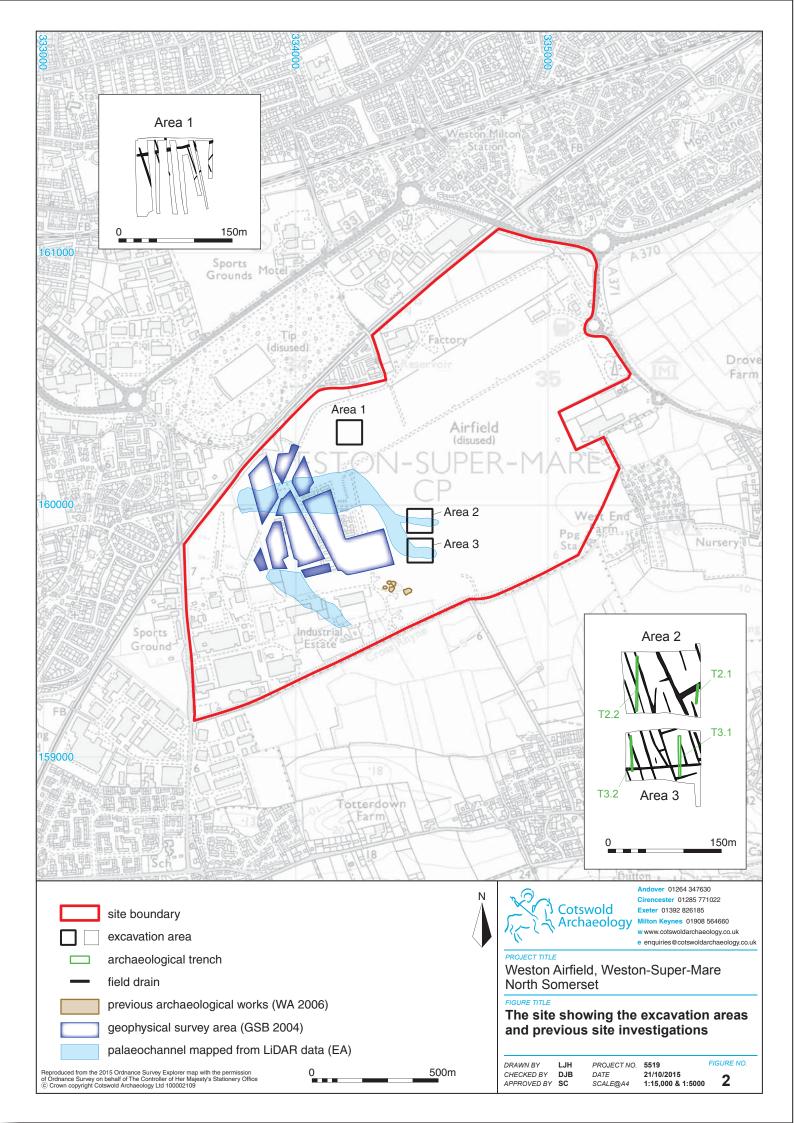
4 ACKNOWLEDGEMENTS

4.1 ARCA would like to thank Luke Brannlund for his help with the fieldwork.

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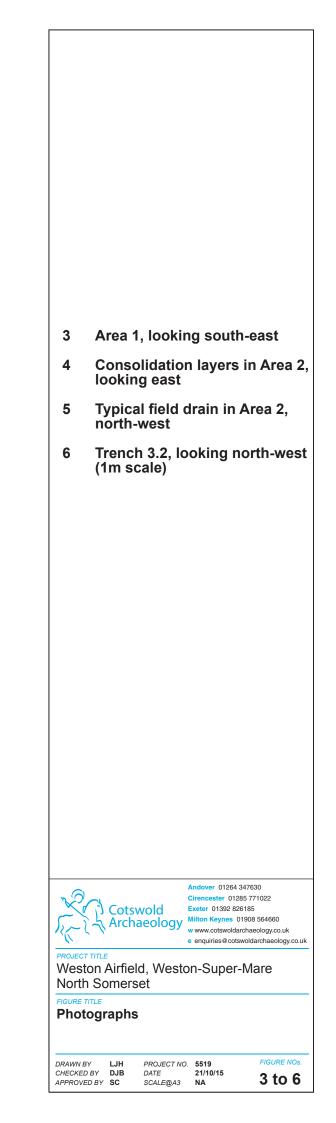














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