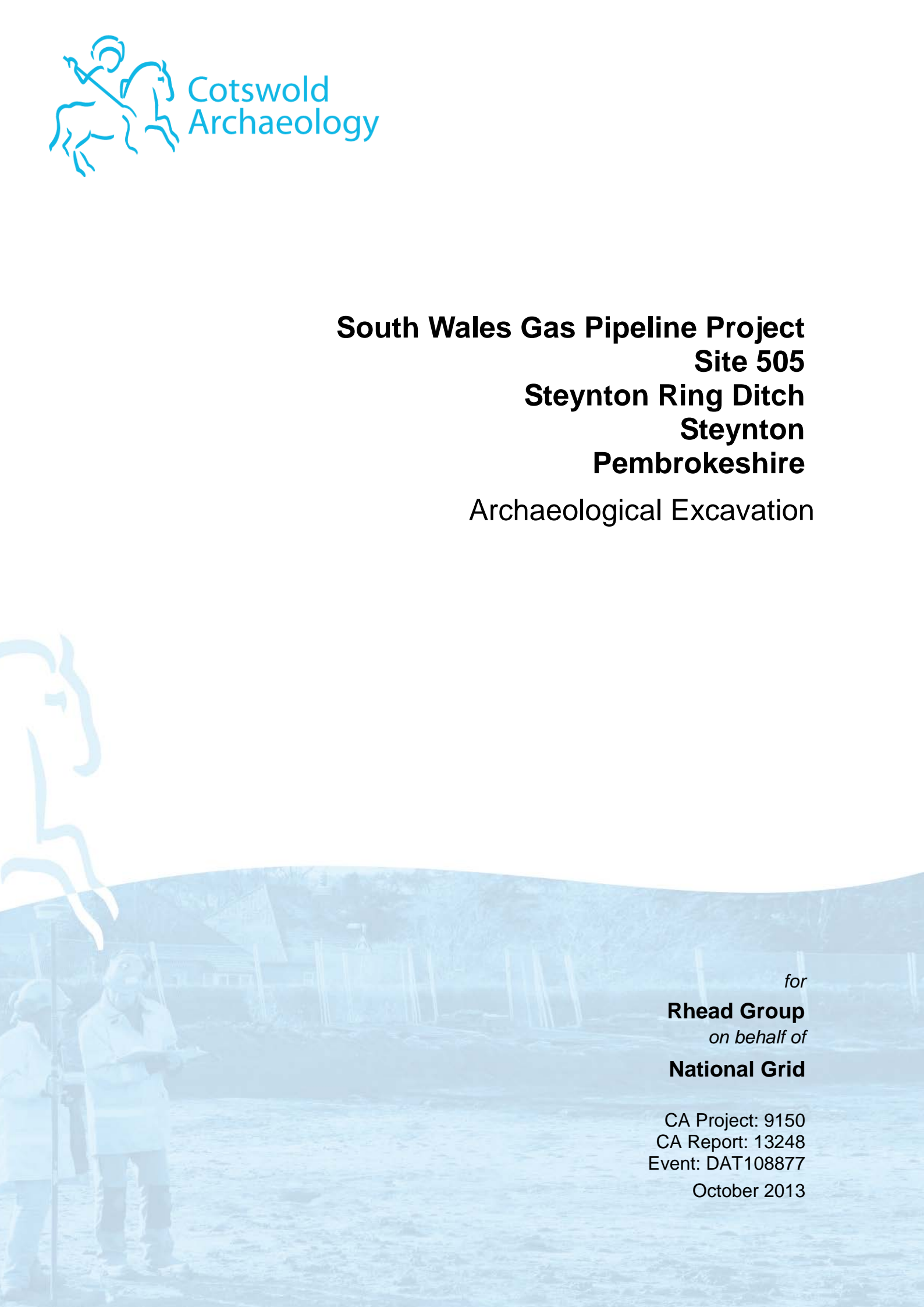


**South Wales Gas Pipeline Project
Site 505
Steynton Ring Ditch
Steynton
Pembrokeshire**
Archaeological Excavation



for
Rhead Group
on behalf of
National Grid

CA Project: 9150
CA Report: 13248
Event: DAT108877
October 2013

South Wales Gas Pipeline Project Site 505

Archaeological Excavation

CA Project: 9150
CA Report: 13248
Event: DAT102846

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GLOSSARY

CA – Cotswold Archaeology
CAP – Cambrian Archaeological Projects
CPAT – Clwyd Powys Archaeological Trust
DAT – Dyfed Archaeological Trust
GGAT - Glamorgan Gwent Archaeological Trust
FTP – Felindre to Brecon gas pipeline
HER – Historic Environment Record
MHA – Milford Haven to Aberdulais gas pipeline
NAL – Network Archaeology Ltd
NLMJV – Nacap Land & Marine Joint Venture
UPD – Updated Project Design

SUMMARY

Project Name:	South Wales Gas Pipeline Project
Location:	Site 505, Steynton Ring Ditch, Steynton, Pembrokeshire
NGR:	SM 9213 0790
Type:	Excavation
Date:	19 June–4 July 2006
Location of Archive:	To be deposited with RCAHMMW (original paper archive) and Scolton Manor Museum (material archive and digital copy of paper archive; accession number 2008.1)
Site Code:	MHA06

An archaeological excavation was undertaken by Cambrian Archaeological Projects during groundworks associated with construction of gas pipelines (part of the South Wales high pressure gas pipeline scheme) between Milford Haven and Aberdulais, and Felindre and Brecon, which were conducted between 2005 and 2007.

Part of a ring ditch was investigated. Most of the circuit of this ditch was identified during a preceding geophysical survey, which also identified a possible central feature. Approximately one quarter of the ring ditch circuit was exposed within the pipeline easement, and this did not include the possible central feature. The remains are probably those of a barrow and were found in association with a small quantity of Early Bronze Age pottery. Evidence that the barrow was re-visited at least once was found in the form of a burnt deposit partway up the fill sequence of the ditch which produced two statistically inconsistent Early Bronze Age radiocarbon dates.



1. INTRODUCTION

1.1 NACAP Land and Marine Joint Venture (NLMJV), on behalf of National Grid, commissioned RSK Environment (part of the RSK Group) to manage the archaeological works (non-invasive surveys, desk based assessment, evaluation, watching brief, and open area excavation) on a 216km-long section of pipeline from Milford Haven (Pembrokeshire) to Brecon (in Powys). The high pressure gas pipeline (part of the 316km-long pipeline route from Milford Haven to Tirley in Gloucestershire) was required to reinforce the gas transmission network. The archaeological work performed in advance of this pipeline was undertaken in a number of sections by a number of archaeological companies. The westernmost section of 122km, from Milford Haven to Aberdulais, was investigated by CA (then Cotswold Archaeological Trust) during 2005–2007 with some additional excavation work carried out by CAP. The section of 89km, from Felindre to Brecon was investigated by CA during 2006–2007 and CAP during 2007. Assessment reports on the works were completed in January 2012 (NLM 2012a, 2012b) and the current reporting stage was commissioned in February 2013.

1.2 In June and July 2006 CAP carried out an archaeological excavation at Site 505, Steynton Ring Ditch, Steynton, Pembrokeshire (centred on NGR: SM 9213 0790; Fig. 1). The objective of the excavation was to record all archaeological remains exposed during the pipeline construction.

1.3 The excavation was carried out in accordance with professional codes, standards and guidance documents (EH 1991; IfA 1999a, 1999b, 2001a, 2001b and IfA Wales 2008). The methodologies were laid out in an *Archaeological Management Plan* (RSK 2006) and associated *Written Statements of Investigation* (WSIs) and *Method Statements*.

The site

1.4 The site is located within a field on a 70m AOD-high ridge between the Castle Pill to the south-west and the Westfield Pill to the east (Fig. 1). The surrounding landscape is generally gently undulating and rarely exceeds 70m AOD. Numerous springs originate on the ridge close to the site and steeply cut water courses flow into the coast (Man of War Roads) 3km to the south.

- 1.5 The underlying solid geology of the area is mapped as the Milford Haven Group (Argillaceous Rocks and Sandstone) of the Devonian and Silurian Periods; no superficial deposits are recorded (BGS 2013).

Archaeological background

- 1.6 The preliminary *Archaeology and Heritage Survey* (CA 2005) and Dyfed Archaeological Trust Historic Environment Record (DAT HER) identified the presence of a round barrow within the site, although no earthworks were visible during the site walkover survey conducted as part of the *Archaeology and Heritage Survey* (CA 2005, ref. ID 35; PRN 3182).
- 1.7 During the pipeline construction works a Middle Bronze Age burnt mound with two troughs was found at Site 512 along with an early medieval pit whilst at Site 513, Neolithic pits and a Bronze Age ring ditch with urned cremations were found. All of these remains were within 1km to the north-west of Site 505.
- 1.8 Following the walkover survey, a geophysical survey of the site was undertaken which confirmed the presence of a ring ditch, c. 30m in diameter, and suggested that a central feature might be present (BCC 2005; Fig. 2, inset). The site was then evaluated through the excavation of trenches in the immediate vicinity of the ring ditch (CA 2009, evaluation site 36, trenches 119–121; Fig. 2, inset). None of these trenches exposed archaeological features and the ring ditch itself was not examined.

Archaeological objectives

- 1.9 The objectives of the archaeological works were:-
- to monitor groundworks, and to identify, investigate and record all significant buried archaeological deposits revealed on the site during the course of the development groundworks; and
 - at the conclusion of the project, to produce an integrated archive for the project work and a report setting out the results of the project and the archaeological conclusions that can be drawn from the recorded data.

Methodology

- 1.10 The fieldwork followed the methodology set out within the *WSI* (NLM 2006). An archaeologist was present during intrusive groundworks comprising stripping of the pipeline easement to the natural substrate (Fig. 1). Approximately one quarter of the ring ditch was exposed within the pipeline easement. The remaining portion lay

beyond the limit of excavation and was not examined but was preserved *in situ*. The exposed segment was examined within three hand-excavated sondages but the extent of the ditch between these was poorly defined and has thus been depicted as conjectured lines on Fig. 2. A hedge bank feature was recorded on site but was not planned and is therefore not depicted on the figures accompanying this report.

- 1.11 The post-excavation work was undertaken following the production of the UPD (GA 2012) and included re-examination of the original site records. Finds, environmental and radiocarbon-dating evidence was taken from the assessment reports (NLM 2012a) except where the UPD recommended further work, in which case the updated reports were used. The archaeological background to the site was assessed using the following resources:-

- the *Archaeology and Heritage Survey* which was undertaken in advance of the pipeline construction and which examined a 1km-wide corridor centred on the pipeline centre line, including the then existing HER record (CA 2005);
- Dyfed Archaeological Trust HER data (received May 2014) and;
- other online resources, such as Google Earth and Ordnance Survey maps available at <http://www.old-maps.co.uk/index.html>.

All monuments thus identified that were relevant to the site were taken into account when considering the results of the fieldwork.

- 1.12 The archive and artefacts from the excavation are currently held by CA at their offices in Kemble. Subject to the agreement of the legal landowner the artefacts will be deposited with Scolton Manor Museum under accession number 2008.1, along with a digital copy of the paper archive. The original paper archive will be deposited with the RCAHMS.

2. RESULTS (FIGS 2–3)

- 2.1 This section provides an overview of the excavation results; detailed summaries of the recorded contexts, finds, environmental samples (palaeoenvironmental evidence) and radiocarbon dates are to be found in Appendices A, B,C and D. Full, original versions of the specialist reports are contained within the archive.

- 2.2 The natural geological substrate (505003), comprising sandstone, was cut by the ring ditch and by two ditches associated with a former hedge-bank. The hedge-bank ditches were probably of recent (post-medieval or later) date and are not discussed further and are not illustrated.
- 2.3 The ring ditch proved to comprise a rock-cut ditch 2.1m–2.9m wide and 0.55m–0.9m deep with steep edges and a broad, flat base (Figs 2 and 3). During the fieldwork, a possible re-cut was recorded, but subsequent analysis suggests that this was not a real feature and instead related to fill changes. The ditch contained a sequence of natural infills, generally comprising thick homogenous sandy silt deposits with frequent sandstone fragments. In one of the sondages, a thin charcoal-rich lens was present (fill 505017). Samples from this lens revealed that the charcoal was dominated by blackthorn, but included other scrubby species and sloes.
- 2.4 Two sherds of Food Vessel or Urn pottery were recovered from upper fill 505010, whilst undiagnostic crumbs of pottery were recovered from upper fill 505007. The Early Bronze Age date range of the identifiable pottery corresponds with radiocarbon determinations obtained from charcoal lens 505017 which produced date ranges of 2200–1930 and 1890–1650 cal. BC (SUERC-56059 and Beta-249346; 95% confidence). While statistically inconsistent (see Appendix D), both of these date ranges fall within the Early Bronze Age.
- 2.5 A small pit, 505008 (not planned in the field and not illustrated), was cut into the top of ring ditch upper fill 505007 and was the only deposit to produce burnt stone. The date and function of this pit are not known.

Discussion

- 2.6 The geophysical survey confirmed the identification by the HER of a ring ditch occupying relatively high ground (HER ref. 3182). The evaluation results suggest that the ring ditch was not associated with any further features in the immediate vicinity, although whether other remains are present elsewhere on the same high ground is not known. The subsequent excavation demonstrated that the ring ditch survives as a substantial ditch with no associated extant earthwork. Since the full circuit was not exposed, it cannot be confirmed whether or not the ring ditch circuit included any gaps, and the possible central feature identified during the geophysical survey was not exposed.

- 2.7 The location of the ring ditch on top of high ground, taken with the absence of associated settlement features and of any significant domestic finds or palaeoenvironmental assemblages, suggests that the interpretation of this feature as a barrow is reasonable. The association of many barrow cemeteries with water has been noted by Darvill (forthcoming) and may also pertain to this barrow, given its proximity to several springs.
- 2.8 The radiocarbon dates and pottery from the ring ditch post-date its construction, the date of which is not known. Rackham (Appendix C) confirms that data to assess the rate of build-up of the sediments underlying the radiocarbon-dated lens are absent and the period between the ditch's construction and the deposition of the lens might be measured in either decades or centuries. Nonetheless, the small pottery assemblage and the radiocarbon dates from the ring ditch are both compatible with the dating of some of the barrows within the well-known round barrow cemetery at Four Crosses, Powys, a complex that was in use over nearly three millennia from the Neolithic onwards (Darvill forthcoming).
- 2.9 The presence of charcoal-rich lens 505017 within the partially infilled ditch is interesting. Whilst the sloes might have been incidental inclusions on fuelwood, an alternative possibility is that this material was deposited as part of a ceremony, perhaps associated with autumn, although Rackham (Appendix C) notes that the lens may have resulted from the burning of cleared scrub, which would imply maintenance of the monument's visibility. Whatever the case, the deposit does at least demonstrate that the barrow was re-visited after the ditch had been open long enough to have become partially filled at which point the ditch must have been regarded as a 'live' feature rather than a closed monument.

3. PROJECT TEAM

Fieldwork was undertaken by Cambrian Archaeological Projects. This report was written by Jonathan Hart with illustrations prepared by Daniel Bashford. The archive has been compiled by Jonathan Hart and prepared for deposition by Hazel O'Neill. The fieldwork was managed for CAP by Kevin Blockley and the post-excavation was managed for CA by Karen Walker.

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APPENDIX A: CONTEXT DESCRIPTIONS

Context No.	Fill of	Interpretation	Description	W (m)	Depth (m)	Spot date
505001		Topsoil	Red-brown silty clay		0.2	
505002		Subsoil	Red-brown silty sand		0.1	
505003		Natural	sandstone			
505004		Ditch	N/S aligned ?medieval or later hedge bank (no fill nos allocated)	0.85	0.3	
505005		Ditch	N/S aligned ?medieval or later hedge bank (no fill nos allocated)	0.7	0.15	
505006		Ring ditch	Rock-cut ditch: curvilinear in plan, steep but irregular edges, flat base	2.25	0.55	
505007	505006	Ring ditch fill	Upper fill: compact brown clay with sandstone fragments	1.55	0.2	
505008		Pit	Circular in plan with flat base; cut into upper fill 505007	0.3	0.05	
505009	505008	Pit fill	Dark charcoal-rich 'soil'	0.3	0.05	
505010	505014	Ring ditch fill	Upper fill: compact brown fill	3.4	0.3	EBA
505011	505016	Tree-throw pit fill	Red-brown clay	0.85	0.2	
505012			Natural feature			
505013			Natural feature			
505014		Ring ditch	= 505006	2.9	0.9	
505015			Natural feature			
505016	505019	Tree-throw pit fill	Red-brown clay	0.4	0.1	
505017	505014	Ring ditch fill	3rd fill: thin charcoal-rich 'soil' lens	1.1	0.05	
505018			Natural feature			
505019			Tree-throw pit			
505020			Natural feature			
505021			Natural feature			
505022			Context not used			
505022			Natural feature			
505023			Natural feature			
505024			Natural feature			
505025			Natural feature			
505026	505006	Ring ditch fill	Third fill: red-brown silty clay with frequent sandstones and rare charcoal	2.1	0.55	
505027	505006	Ring ditch fill	Second fill: orange-red sandy silt with occasional sandstones	1.1	0.1	
505028	505014	Ring ditch fill	Second fill: red-pink clay silt	2.1	0.15	
505029			Context not used			
505030	505006	Ring ditch fill	Primary fill: orange sandy silt	0.2	0.05	
505031	505006	Ring ditch fill	Primary fill: orange sandy silt	0.25	0.05	
505032	505006	Ring ditch fill	Primary fill: orange sandy silt	0.25	0.05	
505033	505014	Ring ditch fill	Lower fill: dark brown clay silt with occasional sandstones	1.7	0.3	
505034		Ring ditch	= 505006	2.1	0.55	
505035	505034	Ring ditch fill	Upper fill: mid red-brown silty clay with sandstone fragments	2.1	0.3	
505036	505034	Ring ditch fill	Secondary fill: red-brown sandy silt with sandstones	1.35	0.2	
505037			Context not used			
505038	505034	Ring ditch fill	Primary fill: red-brown silty sand	0.5	0.05	
505039	505034	Ring ditch fill	Primary fill: red-brown silty sand	0.5	0.05	

505040	505034	Ring ditch fill	Primary fill: red-brown silty sand	0.7	0.05	
505041	505034	Ring ditch fill	Primary fill: red-brown silty sand	0.95	0.05	
505042		Ring ditch	= 505006 excavated as a box section to test for continuation, so not fully exposed			
505043	505042	Ring ditch fill	Upper fill: mid brown sandy silt with sandstones			
505044	505042	Ring ditch fill	2nd fill: red-brown sandy silt with sandstones			
505045	505042	Ring ditch fill	Lower fill: dark brown silty sand with sandstones			

APPENDIX B: THE FINDS

Prehistoric pottery (Gibson 2013)

Weight (g)	No of Contexts	Periods Represented
161	3	Bronze Age?

Bronze Age

P1 – context 505010 (2 sherds, 7g)



Summary

Sherds in a hard, well-fired but coarse and abraded fabric. The surfaces are grey-brown, the core is black and the fabric averages 11mm thick. The fabric contains abundant crushed stone inclusions that reach 8mm across and frequently break through the outer surface. Six rim sherds vary between a rounded and a slightly internally bevelled profile but this appears to be internal variation rather than two separate vessels. The rim diameter is difficult to estimate due to the smallness of the sherds but would appear to be in the region of 160mm. Decoration is abraded but appears to comprise a single encircling line of twisted cord inside the rim or on the bevel where present. Two encircling but irregular lines in the same technique are found on the outer surface just below the rim. There are traces of possible impressions below these lines but the surface is too abraded to be certain. Bronze Age. Possibly Food Vessel or Urn

Discussion

The slight variation in rim form is typical amongst many poorer quality hand-built vessels in British Prehistory. Both the rounded and slightly bevelled variants are typically found in Bronze Age rather than Neolithic pottery when Impressed Ware rim forms tend to be more rounded (with exceptions in North-east England and South-east Scotland). Rounded and internally bevelled rims are common in both Food Vessels and Urns as is the coarse fabric and twisted cord decoration. Savory (1980, Cat. No. 418.2) illustrates a Collared Urn with cord-impressed Collar and internal bevel from Llanboidy, Dyfed, associated with cremated human remains and a cord-decorated Cordoned urn with internal bevel from Penmaenmawr, Gwynedd (Savory 1980, Cat. No.403.1). A cord-impressed Food Vessel from Llanddyfnan, Anglesey (Savory 1980 Cat. No. 391) with twisted cord encircling lines on both the bevel and the neck, serves to illustrate that the technique and rim forms are common to both, clearly related,

vessel types. Twisted cord impressions are exceptionally rare on ceramics after c.1200 BC so this vessel may be broadly dated c.2000-1200 BC.

Other Material

Context 505001: 7 undiagnostic sherds + crumbs (68g)

Context 505007: 10 undiagnostic sherds (86g)

APPENDIX C: PALAEOENVIRONMENTAL EVIDENCE BY JAMES RACKHAM

Animal Bone

A single metacarpus bone of cattle (74g) was recovered from topsoil context 505001. The bone comprises the proximal end and most of the shaft and has fragmented into four pieces. It is in a very poor condition, very brittle and friable, with extensive surface erosion and exfoliation and both proximal and distal ends 'rubbed' or work off. This is likely to be of recent origin.

Environmental soil samples

Four environmental samples (505001, 505002, 505003, 505037) were taken at this site. Two were taken from a lens in the ring ditch dated to the Early Bronze Age on the basis of two pottery sherds, one from the undated fill of a tree throw and one from undated pit 505008 cut into the upper fill of ring ditch 505006. In addition to these specific spot samples of charcoal were taken from contexts 505007 and 505010. These latter taken from the ring ditch fills have no specific value, such as a structural element, so were not taken further than the study undertaken at the assessment (see below). Charcoal analysis has more value when applied to a soil sample where a random sample can be analysed. A piece of *Prunus* sp. branch wood and hazel charcoal were radiocarbon dated from deposit 505017 (sample 505003) and yielded Early and Middle Bronze Age dates confirming the dating of the ring ditch (Table 1).

Table 1 Bulk environmental samples from Site 505

sample no	context no	feature	description	processed wt kg	processed vol l	date
505001	505009	505008	Pit fill	1.75	1	undated
505002	505016	505019	Tree throw pit fill	4	nd	undated
505003	505017	505014	Ring ditch fill	8.75	nd	1880-1620 cal BC (<i>Prunus</i> branch wood) 1937-2195 cal BC (hazel char.)
505037	505017	505014	Ring ditch fill	2	nd	E-MBA

The samples were processed in the manner described in the assessment report (Carruthers 2008). The residues for samples 505001-3 were located, sorted and refloats with the refloats noted as the '2nd flot' in Table 2. The 2nd flots were scanned for identifiable plant remains, but none were found.

Table 2. Data for the environmental samples from Site 505

sample no	context no	pro-processed wt kg	1st flot vol ml	2nd flot vol	residue wt g	pottery	burnt clay	burnt stone	coal	flint	magnetic g.	burnt bone	comments
505001	505009	1.75	40	26	205			131g			0.2		
505002	505016	4	33	17	1050						0.2		
505003	505017	8.75	61	6	3156						0.4		
505037	505017	2	10	-	nd								

* abundance rating – E= 1-10 items; D=11-50, C=51=100, B=101-200, A=>200; nd – no data

The only evidence for activity associated with the tree throw is a small concentration of charcoal in the feature. With no date or location for the feature this material was not studied. The ring ditch is believed to be a round barrow, although with only a small section of the ditch revealed and excavated this is not proven. The fact that it sits on the summit of a small hill would support its interpretation as a barrow. The two samples from the ring ditch, taken from a charcoal rich lens, were both rather small so the fact that they are devoid of finds cannot be construed as significant, considering the low densities of archaeological debris in features of prehistoric date sampled elsewhere along the pipeline. The small pit, 505008, cut into the top of ring ditch upper fill 505007 is the only deposit to produce burnt stone (although no residue was available for sample 505037). The charcoal was studied during the assessment (Schmidl *et al* 2009) and only *Alnus/Corylus* (alder/hazel) charcoal was identified (see below). Four snail shells were recovered from sample 505001, shells of *Ceciloides acicula* (a burrowing snail, almost certainly intrusive), *Punctum pygmaeum*, *Trichia hispida* and *Carychium* sp. Two shells were recovered from tree throw pit 505019, from *Lymnaea truncatula* and *Vallonia excentrica*. The survival of shells is unusual in the deposits along the pipeline and the reliability of these is in some doubt. Those in the tree throw reflect damp ground and grassland respectively, while those from pit 505008 would generally be found in a damp shaded habitat. All are in good condition with no evidence of surface etching, but not obviously recent.

Charred Plant remains (Wendy Carruthers)

Two samples from context 505017, a discrete charcoal rich fill of the Early Bronze Age ring ditch were fully analysed. Sorting was carried out using an Olympus SZX7 stereoscopic microscope. Flots were first separated into 3 fractions (minimum mesh 250 microns) to facilitate sorting. All modern material was removed prior to measuring the flot volume. Stace (2010) and Zohary and Hopf (2000) were used for nomenclature.

Results

Preservation was reasonable but silt impregnation of the charred remains was problematic in terms of identification. The only way to confirm the identification of one large rounded fruit was to break it open, as the surface characteristics were too obscure. This revealed the stone and kernel of a sloe stone, surrounded by charred flesh. Having recovered the kernel, it was then possible to confirm that another, somewhat amorphous item from sample 505003 was also a sloe kernel, being almost identical in morphology.

The small assemblages from this single ring ditch fill, context 505017, were virtually identical, so they will be discussed as a single assemblage. Low concentrations of sloes (*Prunus spinosa*), hawthorn fruit, (*Crataegus monogyna*), lesser celandine tuberous roots (*Ficaria verna*) and cleavers seeds (*Galium aparine*) were present in the samples suggesting one of four possible interpretations: The scrubby and twining taxa, sloe, hawthorn and cleavers may indicate that a hedgerow was growing nearby, dropping fruits into the ditch where they had become burned. Alternatively the remains were residual, having been burnt during clearance prior to the construction of the monument and having been washed into the ditch at a later date, eroding from the banks/mound. Lesser

celandine commonly grows on scrubby or more open grassy, poor ground. The elongated tuberous roots have been consumed in the past, as described by Mason and Hather (2000). These four items may have been deposited for ritual purposes, either being burned prior to placing it in the ditch or being burned in the ditch. All four species represent edible plants as the leaves of cleavers (*Galium aparine*) can be stripped and eaten as a vegetable (Phillips 1983). Finally, they could represent the waste from foods brought to the site for feasting. Because four of the five sloe fragments had been burned whole and not as stones the author favours the first three of the possible explanations. The flesh of the sloes did not appear to be incompletely formed, dried or shriveled so they were probably burned sometime between August and October. It is notable that only a single possible barley grain was recovered, but this is not surprising for a sample from an Early Bronze Age context on a probable barrow site. However, if the charred fruits and tubers were burned as an offering (but see below) the absence of cereals and hazelnut shell is of interest and perhaps significant in some way that cannot be determined today. Admittedly, the soil samples were small (6.75 litres in total) and cereal remains tend to be scarce in deposits of this early date. However, hazel nutshell is often abundant on sites of this date so this absence is more notable.

Table 3. Charred plant remains identified from samples 505003 and 505037

	Flot	1 st	2 nd	1 st	2 nd
	Period	EBA		EBA	
	Feature type	ring ditch		ring ditch	
	Feature no.	505014		505014	
	Context no.	505017		505017	
	Sample no.	505003	505003	505037	505037
	Proc. Wt kg	8.75		2	
	Vol. flot (ml)	50	6	23	0
Taxa	Common name				
<i>cf Hordeum</i> sp.	<i>cf</i> barley	+			
<i>Ficaria verna</i> Huds.	lesser celandine tuberous root G	2		2	
<i>Prunus spinosa</i> L.	whole sloe fruit fragment (flesh and stone) HSW	3		1	
<i>Prunus spinosa</i> L.	sloe stone		1f		
<i>Prunus spinosa</i> L.	sloe stone kernal	1			
<i>Crataegus monogyna</i> Jacq.	hawthorn stone frag			1f	
<i>Galium aparine</i> L.	cleavers DHY	1f		1f	
Herbaceous stems	possible straw	+		+	
TOTAL		7	1	5	NIL
Volume of soil processed		4.75 l		2 l	
charred fragments per litre		1.5	0.2	2.5	0
Extracted charcoal		?ml		20ml	

HABITAT/SOIL KEY TO TABLES: A = arable; C = cultivated; D = disturbed; E = heath; G = grassland; H = hedgerow; M = marsh/bog; P = ponds, ditches etc.; S = scrub; W = woods; Y = waysides; + data from assessment

a = acidic soils; b = basic soils; d = dry soils; o = open ground; s = sandy soils; w = damp to wet soils

Interpretation

Charcoal (*Dana Challinor*)

The charcoal from the burnt lens deposit 505017 in ring ditch 505014 was examined using the standard methodology. The sample was medium in size, with few large (>8mm) fragments. Much of the charcoal was heavily infused with sediment, which inhibited identification, especially the examination of ring curvature. Two taxa were identified: *Corylus avellana* (hazel) and *Prunus spinosa* (blackthorn). Several fragments exhibited moderate to strong ring curvature and one 3 year old hazel twig was recorded, but this is likely to be an under-representation as it was not always possible to assess maturity. The identification of blackthorn was made on the basis of wide rays, and the occurrence of sloe fruits and kernels in the same deposit corroborates the identification to species level. The condition of the blackthorn charcoal was particularly poor; the material had fragmented into thin flakes, with some vitrification and frequent radial cracks observed.

The apparent dominance of blackthorn wood in the charcoal assemblage raises the probability that small branches were burned with the fruits still attached to them. Whether or not this was a ritual act is unclear at this stage, but it is worth noting that there were no comparable finds of whole (or even partial) hazelnuts with the hazel wood in the assemblage. The preservation of whole fruits indicates optimum charring conditions (i.e. reduced oxygen) either from a low temperature fire; or specific placement of the fruits on the fire to avoid total combustion; and/or only a marginal part of the original fire was later deposited into the ring ditch. In any case, the preservation of the more robust hazel nutshells would be expected.

The frequency of radial cracks in charcoal is thought to correlate to the moisture content of the wood (Théry-Parisot & Henry 2012, 387), and although the evidence from Site 505 is based on subjective observations (and thus, tentative), the numerous radial cracks in the blackthorn charcoal suggests that green wood may have been used. Finally, if the deposit derived from a hedgerow clearance episode, greater charcoal evidence for hedgerow species (especially hawthorn) might be expected.

Table 4: Charcoal from ring ditch 505014, plus results from the assessment (Schmidl *et al* 2009)

	Feature type	Ring ditch fill charcoal lens	Pit	Ring ditch fill charcoal lens	Upper ring ditch fill	Upper ring ditch fill
	Feature number	505014	505008			
	Context number	505017	505009	505017	505010	505007
	Sample number	505003	505001	505003		
<i>Quercus</i> sp.	oak				+(r,sw)	+++
<i>Corylus avellana</i> L.	hazel	7 (r)				
<i>Prunus spinosa</i> L.	blackthorn	21 (r)		+		
Maloideae	hawthorn/apple/pear family			+	+	
<i>Alnus/Corylus</i> sp.	Alder/hazel		+++		+++ (r,sw)	
Indeterminate		2				
Total		30				

s=sapwood; h=heartwood; r=roundwood; sw-stemwood; (brackets denotes presence in some fragments only); + - +++ relative abundance score.

Discussion

The environmental evidence from the charcoal lens in the ring ditch fills tends to suggest the burning of blackthorn brash or hedge cuttings in the autumn, with some hazel and hawthorn brash. The explanation assumes the burning of the brash with the fruits still on to account for the sloe and hawthorn berries that were

charred. The absence of hazelnuts is not an issue since many trees can be largely nutless in the autumn, varying dramatically year to year, and the celandine and cleavers may have been growing on the ditch floor surface or wherever the fire site was.

What is interesting is that no blackthorn was identified from among the charcoal sampled from the other ditch fills in sections 505009 or 505014 or the small pit cut into the upper ditch in section 505009. The assessment analysis carried out by Alex Schmidl (op cit) identified oak and alder/hazel charcoal in the ditch fills and only alder/hazel in pit 505008. Charcoal rich lens 505017 therefore represents an unusual assemblage and almost certainly reflects a single event despite the range indicated by the radiocarbon dates, which might imply residual hazel charcoal. It is quite possible, if not probable, that the burning was carried out *in situ* in the ditch even though there are few traces to suggest it.

While the possibility that this assemblage from 505017 may have some ritual significance cannot be ruled out, the deposit could just represent the autumn clearance of a little blackthorn scrub, with hawthorn and hazel, or the trimmings from a mixed hedge running close by the barrow. The suggested green character of the wood before charring is supported by the presence of the fruits. It is evident from the radiocarbon dates on the blackthorn (*Prunus* sp.) that the deposit could have formed at any time from just a few years to a couple of centuries after the construction of the ring ditch, although only 0.4m of silting had occurred on the ditch floor at the time the deposit formed. This suggests decades rather than centuries, although we have no gauge as to the rate of sediment build up likely in the ditch.

The strong curvature of the charcoal, where curvature could be recorded, suggests a relatively young age for the wood, which would be consistent with hedge trimmings, from cutting or layering that might be undertaken every few years. On balance a bonfire of cuttings, from a Bronze Age hedge nearby, on the floor of the ditch seems the most plausible explanation for this assemblage, although maintenance of the barrow (tending the grave) by removal of scrub could possibly be another explanation. The oak and alder/hazel assemblages recorded during the assessment (see Tale 4) from the other deposits are more typical of the domestic and other fire debris being recorded elsewhere along the pipeline.



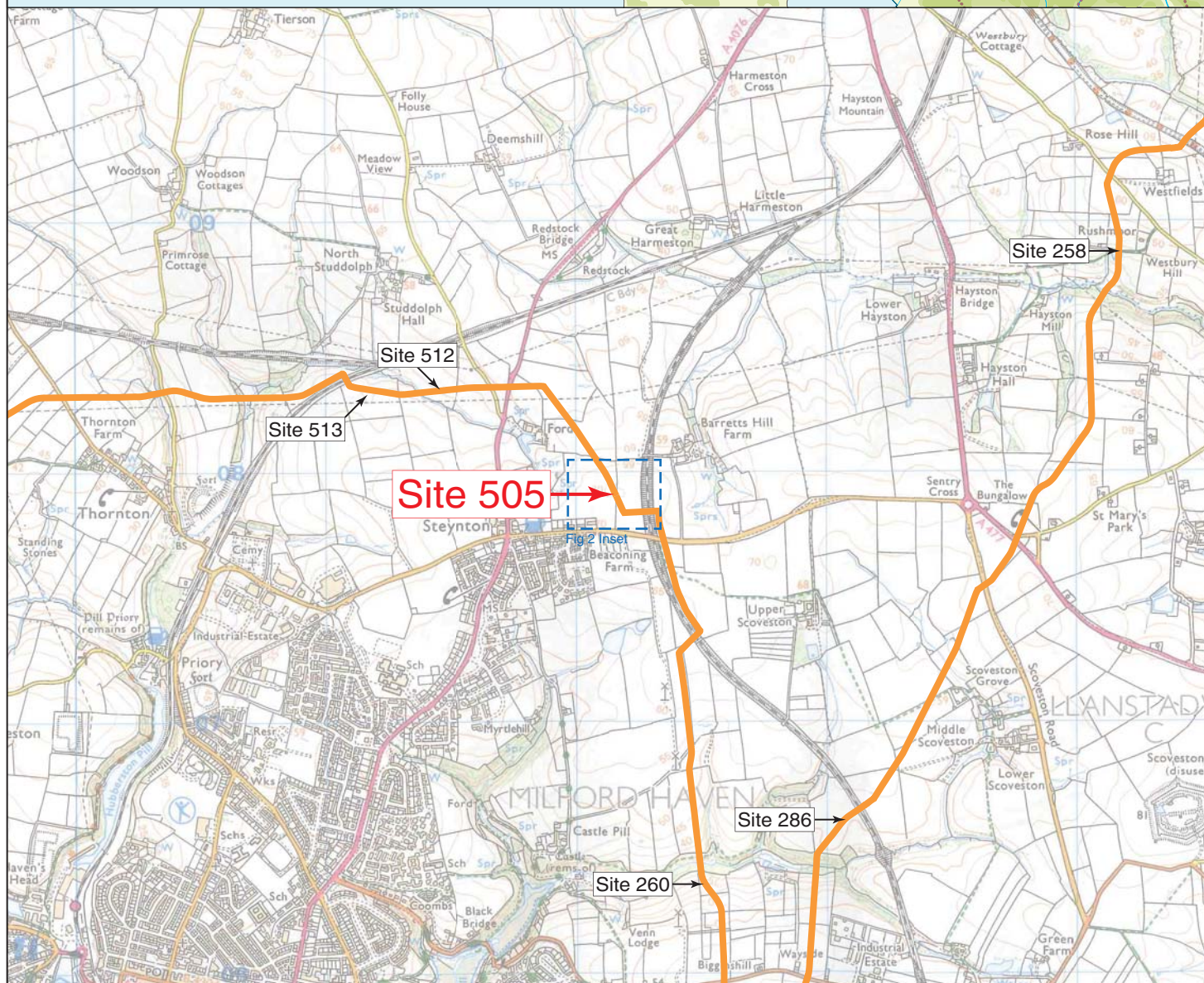
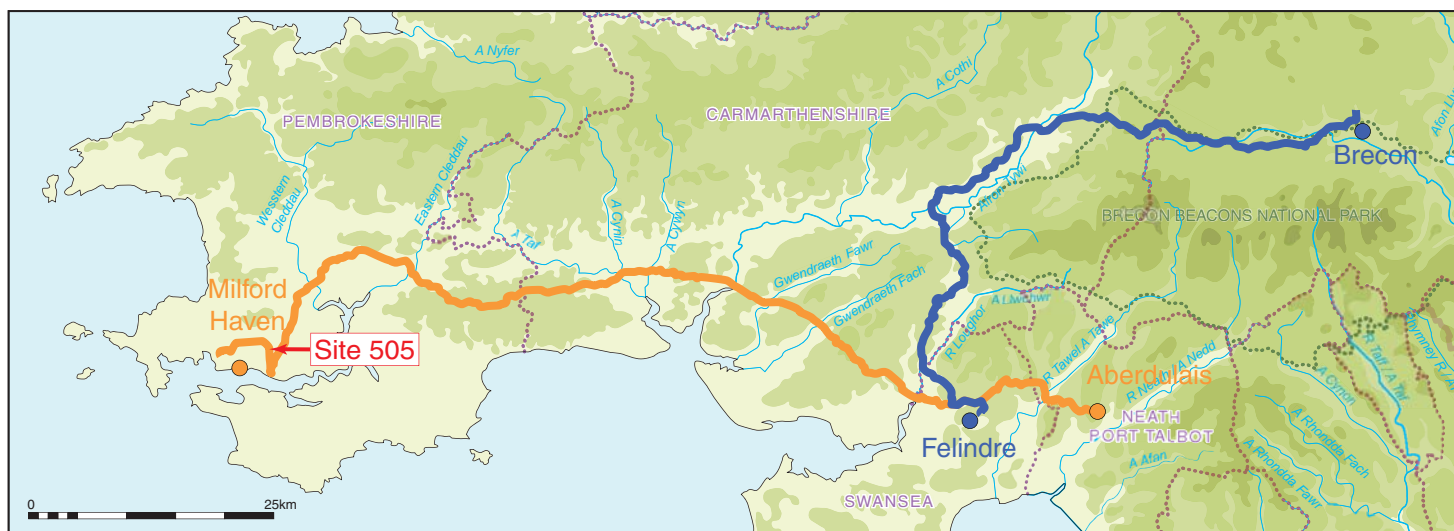
APPENDIX D: RADIOCARBON DATES BY SEREN GRITHIFFS

For the analysis, radiocarbon measurements were produced on short-life, single entity charred plant remains. Samples with the 'Beta-' laboratory code were pretreated as detailed here <http://www.radiocarbon.com/>. Samples with the 'SUERC-' laboratory code were pretreated using an acid-base-acid process. Samples were combusted and graphitized and then dated by Accelerator Mass Spectrometry (AMS). The results are conventional radiocarbon ages, quoted according to the international standard set at the Trondheim Convention. The results have been calibrated using IntCal13, and OxCal v4.2. The date ranges have been calculated using the maximum intercept method, and have the endpoints rounded outward to 10 years.

Two radiocarbon results produced on shortlife samples from a burnt lens within ring ditch 505014 on site 505 were statistically inconsistent ($T'=14.7$; $T'5\%=3.8$; $df=1$; Ward and Wilson 1978). It may be that the older of these results (SUERC-56059) represents redeposited material.

Table 1. Radiocarbon results from sites discussed in the text.

Sample No	Context No	Context Description	Sample	Lab ref	Result	$\delta^{13}C$	Calibrated date range (95%)
505003	505017	Ring ditch fill	<i>Corylus</i> sp. charcoal	SUERC-56059 (GU35417)	3667 ± 40	-24.8 ‰	2200-1930 cal BC
505003	505017	Ring ditch fill	<i>Prunus</i> sp. charcoal	Beta-249346	3450 ± 40	-	1890–1650 cal BC



- Milford Haven to Aberdulais pipeline
- Felindre to Brecon pipeline
- 0-75m contour
- 75m contour
- 200m contour
- 400m contour
- 600m contour



0 1km

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PROJECT TITLE

South Wales Pipeline. Site 505, Steynton Ring Ditch, Steynton, Pembrokeshire

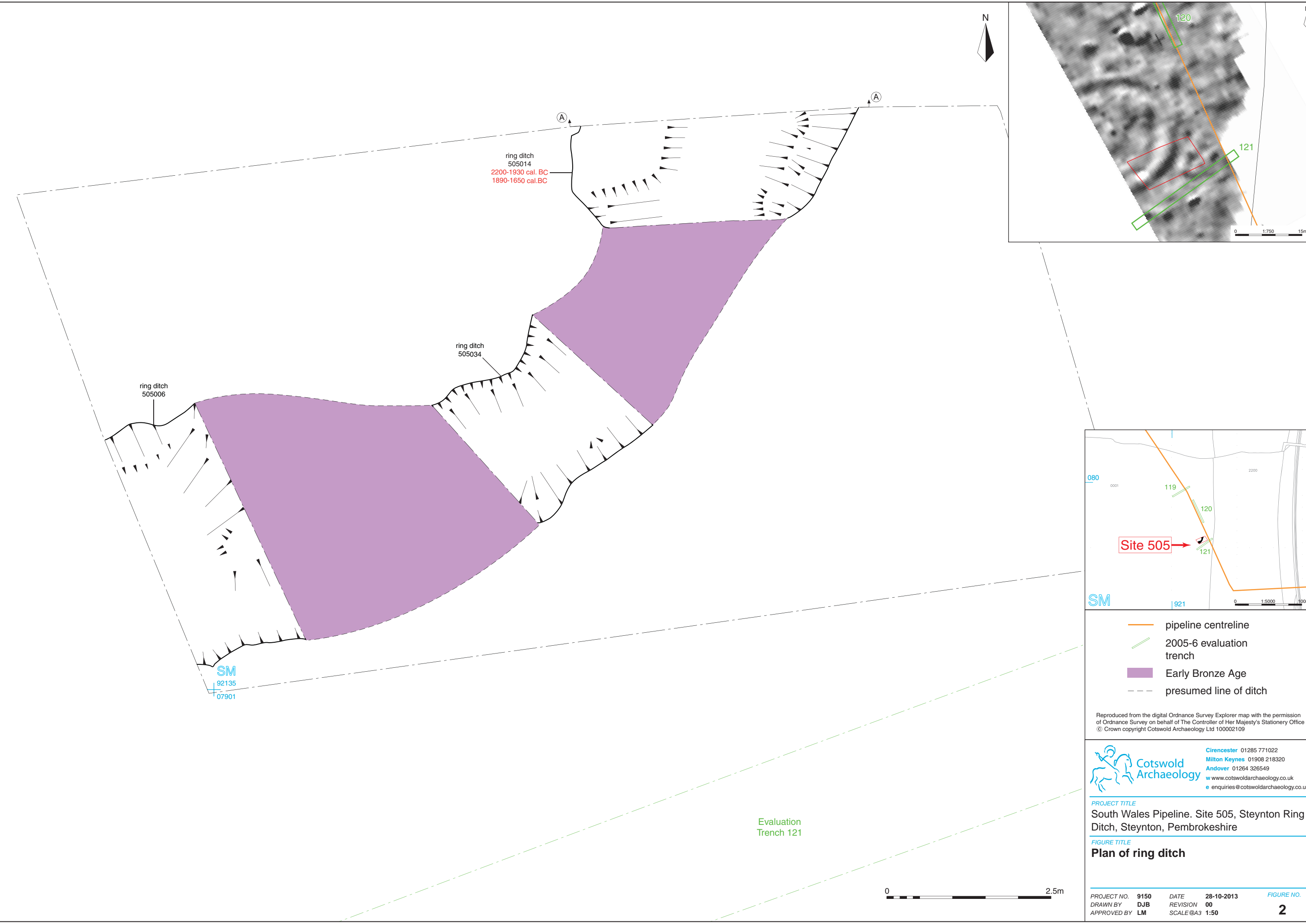
FIGURE TITLE

Site location plan

PROJECT NO. 9150 DATE 24-10-2013
DRAWN BY DJB REVISION 00
APPROVED BY LM SCALE@A4 1:25,000

FIGURE NO.

1



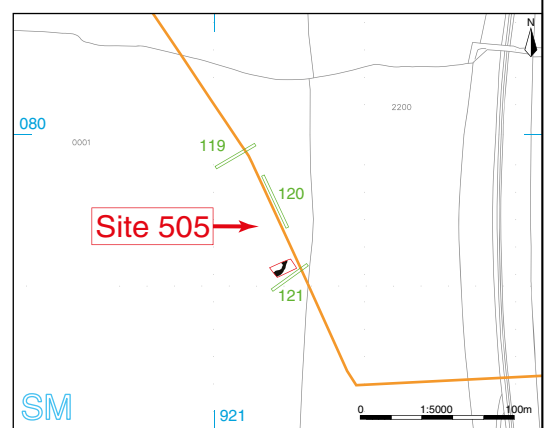
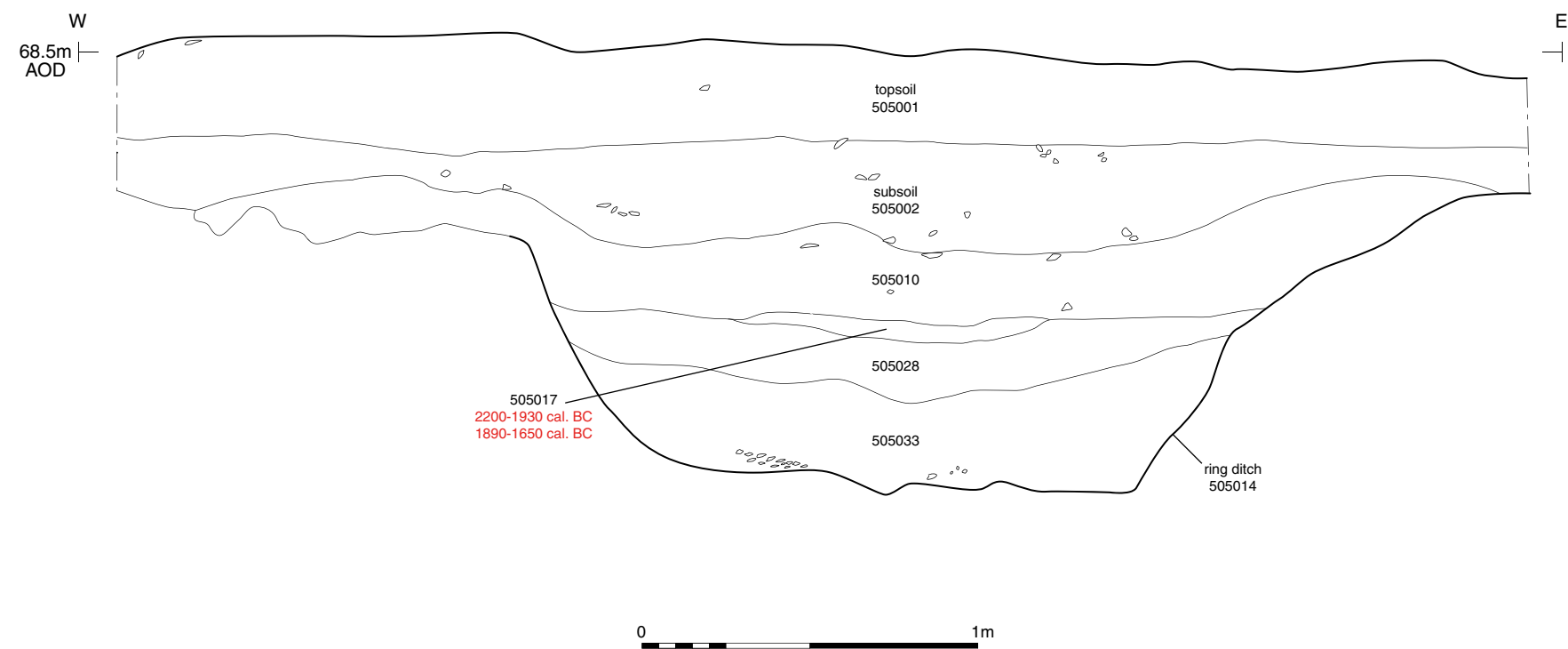
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PROJECT TITLE
South Wales Pipeline. Site 505, Steynton Ring Ditch, Steynton, Pembrokeshire

FIGURE TITLE
Plan of ring ditch

PROJECT NO.	9150	DATE	28-10-2013	FIGURE NO.
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Section AA



- pipeline centreline
- 2005-6 evaluation trench

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PROJECT TITLE
South Wales Pipeline. Site 505, Steynton Ring Ditch, Steynton, Pembrokeshire

FIGURE TITLE
Section through ring ditch