

## Puriton Landfill Solar Farm Somerset

Archaeological Excavation



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# Archaeology Wales

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## **Non-Technical Summary**

This report results from work undertaken by Archaeology Wales Ltd (AW) for Stratus Environmental Ltd. It draws upon the results gained by an excavation on land adjacent to Puriton landfill on the site of a proposed solar farm development. A planning application (42/14/00012/RB) has been submitted for the construction of a new solar farm development on the site with associated access, infrastructure and landscaping.

A previously undertaken desk based assessment highlighted the presence of Roman remains being located to the north of Junction 23 on the M5, within the southern half of the assessment area. A subsequent geophysical survey of this area showed significant settlement remains as well as two clear rectangular enclosures.

The full archaeological excavation of a single trench to house the electricity substation associated with the solar farm was undertaken within the area of settlement features highlighted on the geophysical survey. A total of 1443 finds, including a neonate burial, were recovered from the excavation dating from the later Iron Age and Roman period.

## **1** Introduction

## 1.1 Location and scope of work

- 1.1.1 In October 2014 Archaeology Wales Ltd (AW) carried out a single trench excavation on land adjacent to Puriton landfill, Puriton, Somerset. The trench was centred around NGR ST 31473 41762 (Fig 1) and represented the extent of the solar farm substation footprint (Fig 2). The work was carried out at the request of Stratus Environmental Ltd. The local planning authority is Somerset County Council (SCC) and the planning reference number is 42/14/00012/RB.
- 1.1.2 The AW project number is 2232 and the site code is PLSF/14/EX.
- 1.1.3 A Written Scheme of Investigation (WSI) for the proposed excavation was prepared by Chris E Smith (MCIfA). This was submitted to, and subsequently approved by, Steven Membery, Development Control Officer (DCO) for SCC. A copy of the approved WSI is contained within Appendix 3.
- 1.1.4 The excavation of the solar farm substation footprint represents the third phase of archaeological work undertaken as part of the Puriton solar farm development proposal. A desk based assessment (Smith, 2014) and a geophysical survey (Smith, 2014a) were undertaken earlier in the year.

## **1.2** Geology and topography

- 1.2.1 The underlying solid geology of the assessment area lies on the border between two distinct geological areas. The southern half of the site overlays Triassic Mudstones, including Keuper Marl, Dolomitic Conglomerate and Rhaetic, of the Permian and Triassic periods whilst the northern half of the site overlays Lower Lias limestone of the lower Jurassic period (Geological Survey Map, 2001).
- 1.2.2 The solid geology in the south of the assessment area is overlain by shallow, freely draining, lime rich soils whilst the northern half of the assessment area is overlain by naturally wet, loamy and clayey soils characteristic of coastal flats with naturally high groundwater (Geological Survey Map, 2001).
- 1.2.3 The assessment area covers a total of 102000m<sup>2</sup>. It is bounded to the west by the line of the railway and to the east by the course of the M5. The assessment area is largely flat though rises towards the south.

#### 1.3 Archaeological and Historical Background

- 1.3.1 A desk based assessment has previously been undertaken covering the archaeological and historical background to the area (Smith, 2014).
- 1.3.2 The following is a summary of the findings from the desk based assessment relating to the area subject to geophysical survey, referred to as Area C (Fig 2) in all previous documentation.
- 1.3.3 Area C, located between the railway to the west and the M5 to the east, contains the highest piece of land of the three assessment areas. At its southern end the land in this area is approximately 16m above sea level and gradually falls to 6m above sea level at its northern extent.
- 1.3.4 Anecdotal evidence from the landowner, received verbally during the site visit (2014), suggests that at the southern end of the site, on the higher ground, the natural solid geology is within 0.4 to 0.5m of the surface. This higher ground would have been located above the coastal marsh prior to any formal draining of the lower areas.
- 1.3.5 Whilst shallow soils such as this will negate any possibility of waterlogged remains surviving, the majority of later (Roman period onwards) settlement activity appears to be located on slightly higher ground. Evidence of Roman settlement activity on the higher ground comes from PRNs 10705 (A large Roman settlement uncovered during topsoil stripping near Down End as part of the M5 construction, archaeological features extended both east and west of the M5) and 10702 (Roman material exposed in the railway bank cutting at Down End). Indeed the southern end of Area C is shown as being part of a Roman settlement in an English Heritage Urban Survey: An Archaeological Assessment of Down End (Gathercole, 2003).
- 1.3.6 The remainder of Area C is very similar in both ordnance datum height and appearance to Area B. The presence of ridge and furrow ploughing, as evidenced by aerial photography in the northern half of Area C, is again suggestive of a landscape dry enough in the medieval period for agriculture to have taken place.

- 1.3.7 Owing to the presence of Roman and later settlement on higher ground in the area, as evidenced by Gathercole (2003) and PRNs 10705 & 10702, the potential for Roman settlement activity within the southern half of Area C is deemed to be high.
- 1.3.8 A geophysical survey undertaken earlier in 2014 (Smith, 2014a) confirmed the presence of densely concentrated archaeological features, likely related to past settlement, within the southern half of Area C.

## 2 Aims and Objectives

## 2.1 Excavation

- 2.1.1 The excavation was undertaken in order to:
  - Establish the presence/absence of archaeological remains within the area of proposed development
  - Determine the extent, condition, nature, character, quality and date of any archaeological remains present
  - Establish the ecofactual and environmental potential of archaeological features and deposits
  - Fully excavate and record all features prior to construction thereby ensuring preservation by record

## 3 Methodology

## 3.1 Excavation

- 3.1.1 Excavation of a single trench was undertaken using a JCB 3CX under close archaeological supervision. The trench was located in the south-western corner of the field and measured 15 metres along the east-west axis by five metres north to south (Figs 2,4,5).
- 3.1.2 The trench dimensions represented the footprint of the proposed solar farm substation. Grid co-ordinates for the corners of the trench were supplied by Stratus Environmental Ltd and the trench was subsequently laid out using GPS.
- 3.1.3 The on-site work was undertaken by Simon Reames and Louis Stafford (AW). The overall management of the project was undertaken by Chris E Smith (MCIfA). All areas were photographed using high resolution digital photography.
- 3.1.4 All on-site illustrations were undertaken on drafting film using recognised conventions and scales (1:10, 1:20, 1:50) as appropriate.
- 3.1.5 All works were undertaken in accordance with the CIfA's *Standards and Guidance: for an archaeological excavation* (2014) and current Health and Safety legislation.

## 3.2 Finds

3.2.1 Finds were recovered by hand during the course of the excavation and bagged by context.

#### 3.3 Palaeo-environmental evidence

3.3.1 Deposits suitable for environmental sampling were taken from various contexts throughout the course of the excavation. All were securely stored to avoid contamination from modern materials.

## **4** Excavation Results

## 4.1 Soils and ground conditions

- 4.1.1 The ground conditions were dry after an extended period of sunny weather. Periods of rain during the course of the excavation did not hamper proceedings.
- 4.1.2 The topsoil deposits consisted of a mid-brown silty clay material with occasional small stone inclusions. These were found to be a uniform 0.2m thick across the trench.
- 4.1.3 The subsoil deposits were very similar to the topsoil material though were more firmly compacted and with fewer inclusions. The subsoil deposit was approximately 0.25m thick in all areas.
- 4.1.4 Natural deposits consisted of a firmly compacted yellow and grey clay overlaying the solid limestone bedrock. Bedrock was located at approximately 1.2m below the current ground surface.

#### 4.2 Description (Figs 5-8, Plates 1-21)

- 4.2.1 The topsoil (100) and subsoil (101) were removed by mechanical excavator under close archaeological supervision. The subsoil (101) was found to overlay a 0.28 metre deep, mid grey silty clay, layer (121) that covered the entire trench. Later prehistoric and Roman ceramics were located within this horizon. Towards the eastern end of the site a portion of human cranium was identified from within (121). This was not associated with any features. Although (121) contained finds of seemingly later prehistoric and Roman date, no features were located suggesting the layer was likely to represent a gradual accumulation.
- 4.2.2 Extending throughout the site, but predominantly at the eastern end of the trench, was a relict topsoil (104) and subsoil (103) deposit which had been preserved beneath (121). The buried topsoil (104) is a mid to dark grey silty clay loam with clear horizons and moderate bioturbation. Pottery and bone artefacts found throughout appear to indicate a later prehistoric date. The buried topsoil (104) and subsoil (103) had been truncated by later ditches. Buried topsoil (104) overlay a mid-grey, with reddy manganese mottling,

buried subsoil (103) made up of a clayey loam. Subsoil (103) was very firm in compaction and the higher presence of clay may be suggestive of periodic waterlogging within the area.

- 4.2.3 The site revealed a series of eight ditches, seven of which were on a northeast to southwest alignment and one on a northwest to southeast alignment. All were cut through the buried topsoil and subsoil horizon (103/4).
- 4.2.4 The eastern most of the northwest to southeast linears is ditch [105/135]. Ditch [105/135] was 0.75m deep, 0.7m wide and extends across the width of the trench (five metres). Ditch [105]/[135] contained a bluey-grey/brown silty clay basal/primary deposit (106)/(136) derived from low energy air/water borne silts collecting in the open ditch. This layer was more clayey than later deposits and indicates the likely presence of standing water within the ditch. The secondary fill comprised a yellow/grey mottled silt clay deposit derived from low grade, prolonged natural infilling (107)/(137). The final depositional event evident within ditch cut [105]/[137] is (108)/(139), a mid-grey silty clay deposit.
- 4.2.5 The next linear west of ditch [105] is ditch [109] (Figs 5&7, Plates 8-9). Ditch cut [109] lies on a northwest to southeast alignment in the western half of the site. It had steep, straight sides and a flat base cut onto bedrock natural and was 0.91m wide, 0.57m deep and approximately 5 metres long within the site. At the northern side of the site, the ditch contains a single, low grade, fill (110) composed of mid yellow/brown silty clay with a sandy matrix. No finds were made from the fill (110). Although made up of multiple fine bands, the fill comprises a single deposit. The fine layering within the deposit (110) appears to indicate that the ditch was cut and then silted up naturally with minimal human intervention. As shown on the site illustrations (Figs 5, 7-8), cut [109] and fill (110) are the same as cut [159] and fill (150) respectively and separated due to truncation by cut [114]. Ditch cut [109] is also the same as ditch cut [122] which is located on the southern side of the site. Cut [122] differs slightly from [109] as it contains two distinct deposits, a 0.3m deep, dark grey silty clay primary/basal fill (123) derived from natural infilling of the ditch followed by a 0.62m deep, light grey with vellowy green mottling silty clay (124) forming the secondary fill. Fill (124) appears to be the same deposit as (110)/(150) and is the main deposit of [122] showing a gradual build-up of naturally derived silts accumulating in the open ditch.
- 4.2.6 Situated within, and therefore truncating [109]/[159]/[122], is ditch [114] which is the same as [125] however, the two cuts contain different depositional events. [114] contains an initial fill of a mid-brown silty clay secondary fill (111). (111) is located on the north-eastern side of the ditch and appears to be an episode of slumping, possibly from an associated positive feature such as a bank running on the north-eastern side. This is followed by a similarly located, yellowy brown silty clay fill, (112) which again appears to have slumped in from an associated bank. (113) follows (112) and is a mid-yellowy brown silty clay and the final deposit of [114]. The northern section of this ditch shows a feature with a bank to the east that slowly eroded into the ditch. This is very different from the southern section which revealed an initial dark greeny grey,

0.07m deep fill (126) of trample in the base of the ditch followed by a gradual build-up of low grade secondary silts infilling the ditch (127) to a depth of 0.45m deep.

- 4.2.7 To the west of [159] is ditch [130]. [130] lies on a northwest to southeast alignment and extends from the north western corner of the site and terminates approximately 4.3m into the site. [130] contains an initial deposit of a 0.24m deep, mid-brown silty clay that is concentrated on the base and western side of the ditch (131). Bone and pottery present within this layer indicate the ditch being used as a dumping site for domestic waste. The concentration of material to the western side of the ditch suggests proximity to the settlement area. Deposit (132) overlies (131) and is a yellowy brown silty clay secondary fill extending the width of [130] but concentrated to the western side. The vellow mottling/mixed nature of the deposit indicate the collapse/partial slump of an associated bank to the west of the ditch. No evidence of (132) being cleaned out was observed. The final deposit within [130] is a mid-brown silty clay, 0.32m deep secondary deposit (133) showing a gradual infilling of the ditch. (133) also contains deposit (115) which is a friable, dark black clayey silt dump deposit of charcoal and food waste. (115) contained the articulated remains of small animal limbs under the base of a broken vessel. Ditch [130] shows the entrance of an enclosure ditch with an associated bank on the western side that slowly silted up. This feature could be part of the curvilinear feature noted on the geophysical survey of the area.
- 4.2.8 Immediately west of [130] lies ditch [145] on a northwest to south east alignment. [145] contains a primary fill of dark grey, 0.04m deep silty clay trample material (146) occurring during the construction of the ditch. This is followed by mid-grey with yellow mottling silty clay that is 0.18m deep. (147) shows a gradual build-up of low grade silts accumulating in the open ditch. This is followed by (148) which is the main deposit within [145]. (148) is similar to (147) with a light grey silty clay derived from a gradual build-up of material accumulating in the open ditch. (149) follows (148) and shows the final silting phase of the ditch with low grade secondary silts. Flecks of burnt clay and some patches of superficial geology (102) indicate human activity in the vicinity. [145] truncates an earlier ditch [140].
- 4.2.9 Similar to [145], [140] is on a northwest to southeast alignment and is located in the southwest corner of site. [140] contains a primary fill (141) of dark grey silty clay, 0.07m deep that was created through trample when the ditch was under construction. This is followed by dumped deposit (142). (142) contains a 0.21m deep greeny-grey silty clay deposit of cess like material (Soil Sample 7) suggesting the ditch is being used for dumping of waste from the surrounding area. (143) follows (142) and is made up of a yellow mottled grey silty clay showing some dumped deposits and natural infilling of the open ditch. The yellow mottling indicates excavation into (102) nearby. This is followed by a dump deposit of large tabular stones (144). (144) indicates the demolition of a nearby stone structure or stone quarrying. This is the last depositional event of [140] and is truncated by [145].
- 4.2.10 One discrete feature was identified in the eastern half of the site. Pit [155] contained a mottled yellowy-grey basal fill (156), followed by a mottled yellow deposit of spoil/excavated material (157) which had slumped into the pit on the northeast side.

These two events probably occurred soon after excavation of the feature during the stabilization period. This was followed by a low grade, gradual infilling of the pit with grey silty clay material derived from wind and water borne silts settling in the open pit. Presence of bone indicates human activity nearby but no dating was found. It is unknown what the primary purpose of the pit was; it is unlikely to be for refuse disposal as there is a lack of waste within the deposits.

- 4.2.11 In the centre of the site is a single shrub bowl [153] which contained a heavily root bioturbated deposit (154). No finds were associated with the feature. Another patch of bioturbation (138) was identified beneath (103) and it thought to be the result of animal burrowing.
- 4.2.12 In the eastern half of the site situated next the southern end of site were a series of nine flat stones (120) within [119]. (120) may represent a possible attempt at consolidation or reinforcing an area that is regularly used however the primary purpose of the stones is unknown.
- 4.2.13 In the centre of the trench at the extreme east end, a small crouched inhumation was discovered in cut [115]. The ovoid cut was very ephemeral and difficult to distinguish from (133) which surrounds it. Into the cut, placed on an east-west alignment with the head at the east end was skeleton (118). This was a small, crouched inhumation lying partially on his/her right side facing north. The arms were flexed and raised to the chin and the legs were flexed with the knees brought up towards the chest in the foetal position. The skeleton is well preserved with the skull broken in antiquity, possibly as a result of the weight of spoil over the burial. No grave goods were associated with the burial however the skull appears to be resting on a placed stone which is used as a pillow. Further small animal bones were discovered under the skull but this could be later intrusion. There was no indication of any coffin or shroud present. The burial was covered with deliberately dumped material from the excavated grave (117). [116] is cut into the roman occupation layer (121) and could be tentatively dated to the third and fourth centuries AD.
- 4.2.14 Ditch [151] extended on a northwest to southeast alignment running along the northern edge of the site. The ditch had steep, straight, sides and a flat base cut down onto the bedrock of (102). The bedrock at the base of the ditch [151] appeared channelled and worn, perhaps suggestive of water flowing through the ditch. The ditch contained a single, gradually accumulated, low grade secondary fill (152) made up of a mottled red/grey silty clay very similar to the remnant subsoil (103). One small piece of unabraded, large inclusioned pottery was located within the fill (152). Ditch [151] represents the earliest feature within the trench and is truncated by all of the subsequent northwest-southeast aligned ditches. It is of unknown primary purpose but is most probably a drainage or boundary ditch.

## 5 Finds

5.1.1 A large finds assemblage, given the comparably small area of excavation, was recovered from the trench. A total of 1443 finds were recovered and retained. The finds

assemblage consisted of pottery, ceramic building material, worked and un-worked stone, burnt clay, flint, ferrous and non-ferrous metal objects, shell, disarticulated human and animal remains as well as articulated human and animal remains.

- 5.1.2 The finds catalogue by context is contained within Appendix 4.
- 5.1.3 The ceramic finds were subject to specialist analysis by Rob Perrin. His report is contained below.

#### 5.1.4 Ceramics Analysis

Twenty-one contexts in the six ditches contain pottery, with the total assemblage amounting to 272 sherds weighing 2515 grams and with an estimated vessel equivalent (EVE), based on rims, of 2.34. Sixty sherds weighing 600 grammes and with an EVE of .02 are unstratified. The pottery is not particularly abraded, but most of the sherds are small, with an average sherd weight of below 10 grams. Fifty-nine pieces of fired clay weighing 576 grams also occur in nine contexts and the unstratified pottery also contained one post-medieval sherd. The fabric codes refer to Tomber and Dore 1998.

#### Fabrics

A number of different fabrics occur. The two principal ones are both quartz tempered dark grey ware, with one having abundant medium sized grains and the other abundant smaller grains; some buff and reddish yellow sherds may be the same fabric. Other distinctive fabrics are one with limestone inclusions and another with fragments of quartz, grog and, sometimes, ironstone; both occur in varying colours. Additional fabrics comprise various grey, buff and reddish-yellow wares with mainly sparse amounts of quartz inclusions, shell-gritted ware, New Forest colour-coated ware (NFO RS 2, 144), Oxfordshire colour coated ware (OXF RS, 176) and Gaulish and Southern Spanish amphora. Table 1 shows the fabric groups represented.

Fabric	NoSh	Wgt
Abundant medium		
quartz	74	578
Abundant small quartz	78	642
Limestone, quartz	12	98
Grog, quartz and,		
sometimes, ironstone	13	114
Grey, sparser small		
quartz	60	782
Other greys	4	24
Buff	2	7
Reddish yellow	18	88
NFP RS 2	2	10
OXF RS	6	26
Shell	1	14
S Spanish	1	102

Gaulish	1	30
Total	272	2515

#### Forms

Thirty-one separate vessel rims occur and another nine vessels are represented by identifiable bases or body sherds. Table 2 shows the vessel forms by fabric.

				D	<b>B</b> /	J/B	F	Α	Total
Fabric		J/B	В		D	KR			
Abundant medium quartz			1			1			12
Abundant small quartz					2				8
Limestone, quartz		2							2
Grog, quartz and, sometimes,									2
ironstone	2								
Grey, sparser small quartz				1		2			9
Buff			1						1
Reddish yellow			1				1		2
OXF RS			2						2
S Spanish								1	1
Gaulish								1	1
Total		2	5	1	2	3	1	2	40

Many of the jars in the fabrics with abundant medium or small quartz or sparser small quartz have curved or bead rims and two have simple upright rims. Four of the jars have burnished lattice decoration and the three jars or beakers also have bead rims. The latter and the other jars with bead or upright rims are neckless and are globular in form; one vessel is handled. The two jars with grog and quartz inclusions both have simple curved rims. The two bowls or jars in the fabric with limestone inclusions are also globular and neckless and one has a flattened rim.

The bowl in the fabric with abundant medium quartz has a flanged rim and burnished lattice decoration. The reddish yellow bowl is also a flanged type; it may be an OXF RS vessel from which the slip has been eroded. The definite OXF RS vessels are probably imitation samian ware forms Dr 18 and 31. The buff ware bowl may be an imitation samian ware form Dr 30. The body sherd of the only dish has rouletted decoration and one of the bowls or dishes has a flat-topped rim. The only flagon is in a reddish yellow fabric with a cream slip.

A number of jar sherds have burnished lattice decoration, and the only other decoration is rouletting on a grey ware dish.

## Sources

The fabrics containing either shell, or limestone or grog with, occasionally, ironstone are likely to have been locally produced. The fabric with abundant medium quartz

inclusions is almost certainly Dorset black burnished ware from the Wareham-Poole Harbour area (DOR BB 1, 127). The fabric with abundant small quartz inclusions may be South West black burnished ware (Holbrook and Bidwell 1991, 114, 135, fabrics 40 and 60; SOW BB 1, 129); many sherds certainly have the characteristic lighter coloured margins. It is also possible that black burnished ware was produced in the Brue valley (Farrar 1973, 93-4; Leech 1981a, 38; Swan 1984, 147) but the evidence is circumstantial. The New Forest colour-coated ware, Oxfordshire colour coated ware and Gaulish and Southern Spanish amphora comprise regionally traded and imported wares from well-known sources. No definite examples of Severn Valley ware were noted.

Probable grey ware wasters were identified amongst the pottery in the Huntspill cut area of the Brue valley, less than 10 kilometres from Puriton (Leech 1981a, 41; Leech 1982, 153), and other potential sources include Shepton Mallet (Swan 1984, mf5.594; Evans 2001, 111), the Yeo valley and possibly Ilchester (Leech 1982, 141-2). Some of the grey ware sherds have occasional rounded, fine-grained speckled rock inclusions, generally silver-grey or pink in colour (Seager Smith 1999, 310, fabrics Q103 and 123), which may have been made in the area of the Norton Fitzwarren hillfort (Timby 1989, 54, figs. 22 and 23) to the west of Taunton. Most of the oxidised wares are probably from fairly local sources, possibly including the Brue valley.

#### Parallels

Vessels similar to 2-5 below, in DOR BB 1, SOW BB 1 and grey ware, can be readily paralleled on local and regional sites (eg Leech 1981a, fig. 4, 5-6, 20; fig.7, 2-3; Leech 1981b, fig. 20, 8 and 10). The curved rims of vessels 6-7 occur on a wide range of grey ware jars and direct parallels are difficult to cite without more idea of the precise vessel forms. Dish or bowl 8, below, is similar to Catsgore (Leech 1982, fig. 101, 143) and the handled vessel is probably a form similar to one from Somerset Levels site N401 (Leech 1981a, fig. 10, 3) and Seager Smith and Davies (1993) Type 9.

#### Date

The pottery in fabrics containing either shell, or limestone or grog with, occasionally, ironstone are probably later Iron Age to early Roman in date. The black burnished and grey wares appear to span the 1<sup>st</sup> to 4<sup>th</sup> centuries with the NFP RS 2 and OXF RS vessels also dating to the 4<sup>th</sup> century. The oxidised wares are probably mainly 2<sup>nd</sup> to 3<sup>rd</sup> century in date.

#### The Fired Clay

Fired clay were retrieved from eight contexts (59 pieces, 576 grams) with two (106, 142) containing substantial lumps.

#### Nature of the activities and potential

The trench was on the outside/edge of a settlement, identified by geophysical survey, on an area of raised ground surrounded by what would have been marsh in Roman times. The pottery suggests mixed activities, probably mainly utilitarian, but with a definite more domestic element, noticeably in the later period. The large lumps of fired clay are possibly oven or kiln material, probably associated with briquetage and salt-making or, less likely, pottery production (Leech 1981, 30, 35-8).

- 5.1.5 The small finds were subject to specialist analysis by Dr Lynne Bevan. Her report is contained below:
- 5.1.6 Three small finds were examined, comprising a melon bead (Unstratified), a leaded copper alloy bar fitting (Unstratified) and an iron object (Context 143), possibly part of a small blade or fitting. Both the melon bead and the bar fitting are Roman finds. A Roman date is also therefore probable for the iron blade or fitting fragment.
- 5.1.7 The melon bead was made of pale turquoise blue faience and is a particularly good example of its common type. Melon beads were a long-lived bead form in Roman Britain and are normally very common finds on military sites of the 1st to late 2nd century (Guido 1978, 100). They are not necessarily derived from women's necklaces and it has been suggested that they were horse harness decorations (Fox 1940, 132), a theory which is supported by the discovery of such beads decorating a metal neck collar in a horse burial at Krefeld-Gellep (Pirling 1997, 58, Grave 3960). They are common on Romano-British sites of all types from the 1st to 4th centuries.
- 5.1.8 The leaded copper alloy fitting has a rough surface and might at first be identified as a pot rivet or cramp were it not for its small rounded terminals. Whatever its function the fitting is not closely chronologically-diagnostic beyond a broadly Roman date.
- 5.1.9 The remains of the human infant have been subject to specialist analysis by Malin Holst. The main conclusions of her report are shown below whilst the full document is contained within Appendix 7.
- 5.1.10 At Puriton, the skeleton was buried in a simple pit which had stone linings around the north, east and south sides where the head and upper body were positioned. The skeleton was buried in an east-west orientation with the head in the east. The body was flexed and placed on its right side and from the photographs and plans provided it appears that the hands were most likely around the face or under the chin of the individual. Based on the occupation layer into which it is cut, the individual is believed to be Late Iron Age/Romano-British in date.
- 5.1.11 The osteological analysis of the skeletal remains established that the individual excavated from Puriton comprised of a neonate aged approximately 40+ weeks *in utero* when they died. Sex and stature were undetermined in this individual and they had no evidence for cranial or post-cranial metric traits.
- 5.1.12 That this individual suffered from some form of stress in its early life is clear, however, the exact cause of this stress is not completely determined. It is probable that this neonate suffered from some form of anaemia/other metabolic disease. The bony

changes seen on this individual are not unlike those caused by thalassemia, a hereditary form of anaemia. Hyperporotic bone was observed on the cranial bones, which could possibly indicate thalassemia major. It is possible that they also suffered from metabolic conditions. As there is a confliction with the ageing of this individual, due to the discrepancy of age ranges between measurement of the long bones and dental development, it is possible that the infant was small for their age. This could support that the neonate suffered from poor health, which can have a negative impact on growth, as the child slows or stops growth during the period of stress. It is possible that this individual had experienced such an episode and if it indeed suffered from thalassemia, then it would have also been more prone to contracting infection.

## 5.2 Finds Summary

- 5.2.1 The finds assemblage is quite large for such a relatively small area. Given the proliferation of ceramic and animal bone deposited within and around the series of ditches cut across the site, an interpretation of the area being located on the outskirts of a larger later Iron Age and Roman settlement is not unreasonable.
- 5.2.2 Dating evidence from the finds analysis suggests occupation from the later Iron Age throughout the Roman period.

## 6 Samples

- 6.1.1 A total of nine soil samples were taken throughout the course of the excavation. These comprised five bulk soil samples from around the infant burial (lower leg area, skull area, upper and central thorax, base of grave), a bulk sample of a possible cess deposit from within a ditch fill (142), a bulk deposit of a charcoal rich layer containing articulated animal bones (115), a bulk deposit of the relict topsoil (104) for possible pollen analysis and a single sample suitable for radiocarbon dating from ditch cut [105].
- 6.1.2 Soil samples have been subject to specialist analysis by Wendy Carruthers. Her report will be included as an addendum upon completion.

## 7 Interpretation and Discussion

## 7.1 Overall interpretation

- 7.1.1 The overall interpretation of the site gained from the excavation is that the trench was located on the outskirts of a domestic settlement of likely later Iron Age and Roman date. Evidence from the ceramics and small finds analysis suggests occupation of the site until at least the 4<sup>th</sup> century.
- 7.1.2 The presence of seven likely drainage ditches, an apparent lack of identifiable structural remains, the comparatively large amounts of discarded ceramic and animal bone, along with the burial of an infant in the area, can be taken to suggest that this particular area is liminal in nature and located on the edge of a larger settlement. This is also corroborated by the evidence from the geophysical survey (Smith, 2014).

## 7.2 Discussion

- 7.2.1 The lack of apparent structural remains located within the trench, combined with the presence of seven possible drainage ditches, is suggestive of the assessment area being located away from the centre of human activity. Ceramics analysis has shown a large number of utilitarian wares, presumably domestic in nature which, when combined with the relatively large amounts of animal bone, is suggestive of a nearby domestic settlement. Fired clay from within the ceramic assemblage may indicate small scale industrial activity such as salt making, a common practice within coastal/estuarine settlements.
- 7.2.2 Although no dateable material was associated with the neonate burial, its grave was cut into a clear Roman horizon and sealed by a further, clearly Roman, deposit.

## 7.3 Conclusion

- 7.3.1 It can be concluded that the assessment area and its immediate surroundings, as well as the larger area covered by the geophysical survey (Smith, 2014), is very rich in well preserved archaeological features dating from the later Iron Age and throughout the Roman period.
- 7.3.2 The Roman settlement, possibly including the nearby enclosures observed on the geophysical survey, is likely to represent a small nucleated village. The archaeological potential of the assessment area and its environs is thus deemed to be high.

## 8 Acknowledgements

8.1.1 Thanks are due to Simon Reames and Louis Stafford (AW) for their undertaking of the on-site excavation, to James Cook of Stratus Environmental Ltd for help in setting up the project and to Steven Membery and Richard Brunning (SCC) for their curatorial assistance.

## **9** Bibliography and References

British Geological Survey. 2001, 4<sup>th</sup> Edition. Solid Geology Map, UK South Sheet

Gathercole, C. 2003. An Archaeological Assessment of Down End: English Heritage Extensive Urban Survey

Institute for Archaeologists. 2008. Standards and Guidance for an Archaeological Excavation.

Smith, C, E. 2014. Puriton Landfill Solar Farm. A Desk Based Assessment. AW Report No. 1220

Smith, C, E. 2014a. Puriton Landfill Solar Farm. A Geophysical Survey. AW Report No. 1241

#### From Dr Lynne Bevan's Small Finds Report:

Fox, A. 1940 The Legionary Fortress at Caerleon, Monmouthshire: Excavations in Myrtle Cottage Orchard 1939. Archaeologia Cambrensis **95**, 102-152

Guido, M. 1978 The Glass Beads of the Prehistoric and Roman Periods in Britain and Ireland. Reports of the Research Committee of the Society of Antiquaries of London No. XXXV. London

Pirling, R. 1997 Das Römisch-Fränkische Graberfeld von Krefeld-Gellep 1975-1982. GDV Series B17. Stuttgart

#### From Rob Perrin's Ceramics Analysis:

Evans, C J 2001: The Roman Pottery, in P Leach and C J Evans, *Excavation of a Romano-British Roadside Settlement in Somerset: Fosse Lane, Shepton Mallet, 1990*, Britannia Monograph 18, 107-69

Farrar, R A H 1973: 'The Techniques and Sources of Romano-British black-burnished ware', in Detsicas, A (ed) *Current Research in Romano-British Coarse Pottery*. Council for British Archaeology Research Report 10, 67-103.

Holbrook, N and Bidwell, P T 1991: *Roman Finds from Exeter*, Exeter Archaeological Reports 4.

Leach, Peter 1982: *Ilchester Volume 1. Excavations 1974-1975*. Western Archaeological Trust, Excavation Monograph.

Leech, Roger 1981a: 'The Somerset Levels in the Romano-British period', in Rowley, R T (ed) *The Evolution of Marshland landscapes*. University of Oxford Department of External Studies, 20-51.

Leech, Roger 1981b: 'The Excavation of a Romano-British Farmstead and Cemetery on Bradley Hill, Somerton, Somerset', *Britannia* 12, 177-252.

Leech, Roger 1982: *Excavations at Catsgore 1970-1973*. Western Archaeological Trust, Excavation Monograph 2.

Seager Smith, R and Davies, S M 1993: Black burnished ware type series. The Roman pottery from excavations at Greyhound Yard, Dorchester, Dorset. Offprint from Woodward, P J, Davies, S M and Graham, A H 2003: Excavations at Greyhound Yard, Dorchester 1981-4, Dorset Natural History and Archaeological Society Monograph Series 12.

Seager Smith, R H 1999: 'Romano-British Pottery', in A P Fitzpatrick, C A Butterworth and J Grove, *Prehistoric and Roman Sites in east Devon: the A30 Honiton to Exeter Improvement DBFO Scheme, 1996-9, volume 2*, Wessex Archaeology Report 16, 286-326.

Swan, V G 1984: *The Pottery Kilns of Roman Britain*, Royal Commission on Historical Monuments, Supplementary Series 5. HMSO.

Timby, J 1989: 'The Roman Pottery', in P Ellis, 'Norton Fitzwarren hillfort: a report on the excavations by Nancy and Phillip Langmaid between 1968 and 1971', *Proceedings of the Somerset Archaeology and Natural History Society* 133, 53-59.

Tomber, R and Dore, J 1998: *The National Roman Fabric Reference Collection. A Handbook.* Museum of London Archaeology Service Monograph 2.





Fig 1: Figure showing location of assessment area





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Plate 1: Post machine excavation view of trench, Looking east. Scales 2x2m



Plate 2: Post machine excavation view of trench, Looking west. Scales 2x2m



Plate 3: South west facing section of (103) & (104). Scale 1x1m



Plate 4: North west facing section of [105] & [119]. Scale 1x1m



Plate 5: North east facing section of [105] & [119]. Scale 1x0.5m



Plate 6: West facing section of [135]. Scale 1x0.5m



Plate 7: South facing section of [135]. Scale 1x2m



Plate 8: North west facing section of [109] & [114]. Scale 1x2m



Plate 9: North west facing section of [109], [114] & [130]. Scales 1x2m



Plate 10: East facing section of [122], [125]. Scale 1x1m



Plate 11: South facing section of [122], [125]. Scale 1x1m



Plate 12: East facing section of [145]. Scale 1x1m



Plate 13: North facing section of [140], [145]. Scale 1x1m



Plate 14: West facing section of [140]. Scale 1x1m


Plate 15: North east facing section of [155]. Scale 1x0.5m



Plate 16: North east facing section of [153]. Scale 1x0.2m



Plate 17: Plan view of skeleton (118). Scale 1x0.5m



Plate 18: Oblique view of skeleton (118). Scale 1x0.2m



Plate 19: View east across trench after final reduction by machine showing earliest feature, ditch [151]. Scales 2x2m



Plate 20: South westfacing section of ditch [151]. Scale 1x0.5m



Plate 21: South east facing section [130], [151]. Scale 1x0.5m

# Archaeology Wales APPENDIX III: AW Ltd WSI

# **ARCHAEOLOGY WALES LIMITED:**

# Written Scheme of Investigation

# for Archaeological Excavation of Substation Footprint

at

# Puriton Landfill Solar Farm, Puriton Somerset

Prepared for: Stratus Environmental Ltd

September 2014

Archaeology Wales Limited Rhos Helyg, CwmBelan, Llanidloes, Powys, SY18 6QF Tel: +44 (0) 1686 440371 Email: admin@arch-wales.co.uk

## NON TECHNICAL SUMMARY

This Written Scheme of Investigations details a proposal for an archaeological excavation on the footprint of a substation building associated with the proposed solar farm development at Puriton, Somerset. It has been prepared by Archaeology Wales Ltd for Stratus Environmental Ltd.

## 1. Introduction

The proposed substation location lies just to the west of the route of the M5 motorway and to the north of Walpole (Henceforth – the site). The development proposal has been submitted by Stratus Environmental Ltd. The local planning authority is Somerset County Council (SCC) and the planning application number is 42/14/00012/RB. The site is centred around grid reference NGR ST 31540 41843.

This Written Scheme of Investigation has been prepared by Chris E Smith (MIfA), Project Manager, Archaeology Wales Ltd (Henceforth - AW) at the request of Stratus Environmental Ltd. It provides information on the methodology which will be employed by AW during the excavation of the substation structures footprint at the southern end of the assessment area (See attached plan).

A desk based assessment (Smith, 2014) and a geophysical survey (Smith 2014a) have both previously been undertaken at the site. Each of the previously undertaken pieces of work located archaeological features within the assessment area of likely prehistoric and/or Roman date.

After discussions with Steven Membery, development control archaeologist (DCO) for SCC, recommendations were made for the open area excavations of three separate areas within the site (A, B and C – See attached plan).

The area of the substation is located within area A and marked as a solid red rectangle within Area A on the attached plan. A phased approach to the recommended excavations will be undertaken with work beginning in the first instance only within the substation footprint. This is owing to considerable time restraints on the required construction of the substation.

Excavation work on the other areas, the remainder of A as well as B and C, will be undertaken prior to any development being undertaken in these areas at a later date and under separate Written Schemes of Investigation.

AW is a Registered Organisation with the Institute for Archaeologists (IfA). All work will be undertaken by suitably qualified staff and in accordance with the standards and guidelines of the IfA.

## 2. Site specific objectives

The proposed archaeological work will elucidate the presence or absence of archaeological material that might be affected by the proposed substation construction, in particular its character, distribution, extent, condition, date and relative significance.

Upon completion of the substation excavation, an interim report will be produced that

will provide information and illustrations of sufficient detail to allow informed decisions to be made regarding the excavations of Areas A, B and C.

The interim report will be drawn up immediately upon completion of the substation excavation and prior to excavation of other areas. A copy will be submitted to Steven Membery of SCC and to Stratus Environmental Ltd.

# 3. Scope of the work

The archaeological work for the site is phased in its approach.

- Phase 1 Desk based assessment undertaken 2014 (Smith, 2014)
- Phase 2 Geophysical survey undertaken 2014 (Smith 2014a)
- Phase 3 Substation footprint excavation & preparation of report for submission to and approval of LPA
- Phase 4 Potential Excavation of Areas A, B and C
- Phase 5 Preparation and dissemination of results

## 4. Methodology

## Phase 3 – Substation Excavation

## **Preliminary work**

After ensuring the siting of live services, tree preservation orders and other constraints, the footprint of the structure will be marked out on the ground.

## Excavation

The trench will be excavated initially using a machine fitted with a wide toothless ditching blade. Thereafter all identified archaeological contexts will be excavated manually unless otherwise agreed with the curator in advance. All modern overburden and non-archaeological subsoils will be removed down to the level of the first recognisable archaeological horizon. All archaeological contexts subsequently located will be adequately sampled in order to define their function, date, and relationship to adjacent features. Excavation of the footprint area will be undertaken down to the level of the natural horizon.

Sample percentages of each feature will include up to 50% of all linear features, 50% of postholes and sub-1m pits through half sectioning and 50% of pits over 1m in diameter through opposing quadrant excavation.

All trench sides and bases must be cleaned manually by trowelling to reveal contexts in plan and profile. This must be completed even if the area apparently reveals only natural deposits. Spade or shovel cleaning only of trench bases and sides will not be acceptable. Excavation will be completed down to the level of the natural horizon.

Recording will be carried out using AW recording systems (pro-forma context sheets

Written, drawn and photographic records of an appropriate level of detail will be maintained throughout the course of the project.

Photographs will be taken in digital \*RAW format, using a 14MP camera, with photographs converted into Tiff format for archive storage.

Plans and sections will be drawn to a scale of 1:50, 1:20 and 1:10 as required, and these will be related to Ordnance Survey datum and published boundaries where appropriate.

#### Artefacts

Archaeological artefacts recovered during the course of the excavation will be cleaned and labelled using an accession number, which will be obtained from the local museum. A single number sequence will be allocated to all finds. The artefacts will be stored appropriately until they are deposited with a suitable local museum.

All finds of gold and silver will be removed to a safe place, and the client, SCC-HET and the local coroner informed within the guidelines of the Treasure Act 1996.

Any finds which are considered to be in need of immediate conservation will be referred to a UKIC qualified conservator (Phil Parkes at Cardiff University).

## **Human remains**

In the event of burials or cremations being found all work will be halted in the area of the burials and their extent and nature established. The client, SCC and the Ministry of Justice will be informed and a methodology of excavation agreed which will adhere to Ministry of Justice Guidelines.

### **Environmental and technological samples**

Bulk environmental samples, technological samples and radiocarbon samples will be taken as appropriate when significant deposits are located. Sampling will adhere to English Heritage (2002) guidelines.

### **Specialists**

In the event of certain finds/features etc. being discovered, the site archaeologist may have to seek specialist opinion for assistance. Such specialists will be accessed either internally within AW itself or from an external source. A list of external specialists is given in the table below.

Туре	Name	Tel No.
Flint	Amelia Pannett	02920 899509
Animal bone	Jen Kitch	07739 093712
CBM, heat affected clay,	Rachael Hall	01305 259751
Daub etc.		
Clay pipe	Hilary Major	01376 329316
Glass	Andy Richmond	01234 888800
Cremated and non-cremated	Malin Holst	01759 368483
human bone		
Metalwork	Kevin Leahy	01652 658261

Neo/BA pottery	Dr Alex Gibson	Bradford University
IA/Roman pottery	Jane Timby	01453 882851
Post Roman pottery	Mr Stephen Clarke	01600 714136
Charcoal (wood ID)	John Carrot	01388 772167
Waterlogged wood	Nigel Nayling	University of Wales (Lampeter)
Molluscs and pollen	Dr James Rackham	01992 552256
Charred and waterlogged plant remains	Wendy Carruthers	01443 233466

## 5. Monitoring

SCC will be contacted at least one week prior to the commencement of site works, and subsequently once the work is underway.

Any changes to this Written Scheme of Investigations that AW may wish to make after approval will be communicated to SCC for approval on behalf of Planning Authority.

Representatives of SCC will be given access to the site so that they may monitor the progress of the work. SCC will be kept regularly informed about developments, both during the site works and subsequently during the post-fieldwork programme.

If significant detail is discovered, all works will cease and a meeting will be convened with Stratus and SCC to discuss the most appropriate way forward.

# 6. Archiving and Reporting

#### Site archive

An ordered and integrated site archive will be prepared in accordance with: Management of Research Projects in the Historic Environment (MoRPHE) English Heritage (2006) upon completion of the work on site. It will include:

- All site records (fully cross-checked and catalogued)
- Digitised copies of all site plans
- All artefacts (cleaned, marked and catalogued as appropriate)
- All ecofacts (sample processed and catalogued as appropriate)
- An interim or summary report on the above.

The requirements for archive storage will be agreed with SCC beforehand.

The archive generated from the substation excavation will be included within the larger archives of areas A, B and C upon their completion.

## **Interim reporting**

A report will be submitted to Stratus and to SCC for comments within 3 weeks of Phase 3 being completed.

Digital copies will also be provided in pdf format.

Terminology will be consistent with the English Heritage Thesaurus.

The client report will contain, as a minimum, the following elements:

- Concise non-technical summary of the results
- Detailed plans of the site
- Site illustrations, related to Ordnance Datum
- Written description
- Artefactual and Ecofactual summaries
- Statement of local and regional context
- Impact assessment with mitigation proposals
- Conclusions as appropriate
- Bibliography
- A copy of the AW Written Scheme of Investigations

A summary of the work will be published in a recognised national journal no later than a year after its completion.

#### **Final archive**

Although there may be a period during which client confidentiality will be maintained, the report and the final (project) archive will be deposited in the appropriate repository not later than six months after completion of the work. The contents of the archive will be agreed beforehand.

# 7. Resources and timetable

#### Standards

The fieldwork will be undertaken by AW staff using current best practice.

#### Staff

The project will be undertaken by suitably qualified AW staff. Overall management of will be undertaken by Chris E Smith MIfA (CV shown in Appendix 1). All staff will have valid CSCS cards.

#### Equipment

The project will use existing AW equipment.

## Timetable of archaeological works

The work will be undertaken at the convenience of the client. No start date has yet been agreed.

#### Insurance

Archaeology Wales Limited (AW) is an affiliated member of the CBA, and holds Insurance through the CBA insurance service.

### Health and safety

All members of staff will adhere to the requirements of the *Health & Safety at Work Act*, 1974, and the AW Health and Safety Policy.

If AW has sole possession of the site, then AW will produce a detailed Risk Assessment for approval by the client before any work is undertaken. If another organisation has responsibility for site safety, then AW employees with be briefed on the contents of all existing Risk Assessments, and all other health and safety requirements that may be in place.

# Archaeology Wales APPENDIX IV: Finds Catalogue by Context

# Archaeology Wales Ltd.

# Finds catalogue Puriton Landfill Solar Farm

# Site code: 2232 - PLSF/14/EX

Number Pottery	Context	Description	Amount	Weight in grams	Kept/Disc.
,	104		20	136	Kept
	106		4	32	Kept
	108		15	123	Kept
	110		33	172	Kept
	111		2	23	Kept
	113		22	56	Kept
	115		8	21	Kept
	115	Associated with animal burial	4	336	Kept
	120		2	65	Kept
	121		11	96	Kept
	124		3	11	Kept
	126		7	54	Kept
	129		11	88	Kept
	131		11	104	Kept
	132		12	180	Kept
	133		16	187	Kept
	134		13	78	Kept
	143		12	51	Kept
	137		1	10	Kept
	146		2	5	Kept
	147		12	72	Kept
	148		8	53	Kept
	149		4	42	Kept
	U/S		62	623	Kept
Tile/CBM					
	101	Tile	1	292	Kept
	U/S	СВМ	1	39	Kept
Stone					
	113	Polished	1	75	Kept
	117	Pilow' stone (burnt) associated with infant burial	5	434	Kept
	121	Counter / gaming piece	1	15	Kept
	129	Polished	1	117	Kept
	147	Small piece of stone with plaster (?)	1	< 1	Kept
	142	Worked stone	1	37 KG	Kept
Flint					
	106		1	1	Kept
	117		1	< 1	Kept
	136		2	38	Kept

Burnt clay / stone				
104		9	62	Kept
106		8	180	Kept
108		7	75	Kept
110		9	90	Kept
111		1	8	Kept
113		7	76	Kept
115		2	7	Kept
120		8	71	Kept
121		4	17	Kept
124		2	8	Kept
126		5	40	Kept
129		8	37	Kept
131		1	19	Kept
132		1	38	Kept
134		1	30	Kept
142		7	102	Kept
143		2	3	Kept
147		4	14	Kent
149		2	7	Kent
152		- 1	118	Kent
132 U/S		<u>-</u> 13	188	Kent
0,0			200	
Ferrous finds				
143		1	4	Kent
148		2	33	Kent
u/s	Various objects	11	89	Kent
0,0		±±	05	Kept
Shell				
108	Snail	1	20	Kent
110	Snail	- 1	2	Kent
131	Shail	2	2	Kent
131	Shail	1	2	Kent
1/7	Shall	1	2 Q	Kont
147	Shah	1	5	Керс
Other finds				
	Blue glass 'Melon' bead	1	3	Kent
0,0		-	5	Kept
Articulated human b	one			
SK118	Infant skeleton - skull	75	56	Kept
0	Thorax	122	33	Kent
	Right leg	5	10	Kent
	Left leg	16	13	Kent
	Pelvis	10	ц С	Kont
	Right fore arm	10	5	Kont
	Left fore arm	1.5 Q	5	Kont
		o	U	Kept
Articulated animal be	one			
115	Animal skeleton - limbs	9	24	Kept
	Limbs	9	31	Kent
	<b>*</b>	2	~ -	nept

	Limbs	17	16	Kept
	Knuckle	7	10	Kept
	Limbs	4	21	Kept
	Cranium	15	29	Kept
	Limbs	8	31	Kept
	Knuckle	4	3	Kept
117	Small animal skeleton	29	< 1	Kept
Disarticulated bone				
104	Possible part of human cranium	1	45	Kept
104		30	361	Kept
106		24	92	Kept
110		24	466	Kept
111		14	255	Kept
113		10	38	Kept
120		7	78	Kept
121		20	153	Kept
124		8	30	Kept
126		7	23	Kept
129	Incl. 1 burnt piece	11	42	Kept
131		36	689	Kept
132		1	< 1	Kept
133		5	64	Kept
142		8	30	Kept
143		6	75	Kept
146		10	158	Kept
147		3	14	Kept
148	Incl. 2 burnt pieces	18	78	Kept
149		6	9	Kept
158		4	73	Kept
U/S		54	692	Kept

Total finds:		
Pottery		295
Tile / CBM		2
Stone		10
Flint		4
Burnt clay / stone		102
Ferrous finds		14
Shell		6
Other finds		1
Articulated human bone		249
Articulated animal bone		102
Disarticulated bone		658
	Total:	1443



# Archaeology Wales Ltd Context Register

Site Name:

PLSF/14/EX

Date:

02/10/14

No.	Context	Description of Context	Drawing	Date	Inits.
	type		number		
100	Deposit	Topsoil	4	02/10	SR
101	Deposit	Subsoil	4	02/10	SR
102	Deposit	Natural Clay/Geology	4	02/10	SR
103	Deposit	Buried subsoil	1	02/10	SR
104	Deposit	Buried topsoil	1	02/10	SR
105	Cut	Cut of linear	1	02/10	SR
106	Deposit	Fill of 105	1	02/10	SR
107	Deposit	Fill of 105	1	02/10	SR
108	Deposit	Fill of 105	1	02/10	SR
109	Cut	Cut of linear	5	02/10	LS
110	Deposit	Fill of 109	5	02/10	LS
111	Deposit	Fill of 114	5	02/10	LS
112	Deposit	Fill of 114	5	02/10	LS
113	Deposit	Fill of 114	5	02/10	LS
114	Cut	Recut of 109	5	02/10	LS
115	Deposit	Charcoal rich lens	9	03/10	LS
116	Cut	Cut of E-W grave	8,9	03/10	LS
117	Deposit	Fill of 116	8,9	03/10	LS
118	Deposit	Skeleton in 116	8,9	03/10	LS
119	Cut	Cut of shallow roman feature	2	03/10	SR
120	Deposit	Fill of 119	2	03/10	SR
121	Deposit	Occupation horizon	3,4,6	03/10	SR
122	Cut	Cut of linear	3	03/10	SR
123	Deposit	Fill of 122	3	03/10	SR
124	Deposit	Fill of 122	3	03/10	SR
125	Cut	Cut of linear	3	03/10	SR
126	Deposit	Fill of 125	3	03/10	SR
127	Deposit	Fill of 125	3	03/10	SR
128	Deposit	Fill of 125	3	03/10	SR
129	Deposit	Fill of 125	3	03/10	SR
130	Cut	Cut of linear	5	03/10	LS
131	Deposit	Fill of 130	5	03/10	LS
132	Deposit	Fill of 130	5	03/10	LS

# Archaeology Wales Ltd Context Register

Site Name:

PLSF/14/EX

Date:

02/10/14

No.	Context	Description of Context	Drawing	Date	Inits.
	type		number		
133	Deposit	Fill of 130	5	03/10	LS
134	-	VOID	-	-	-
135	Cut	Cut of linear	6,7	09/10	LS
136	Deposit	Fill of 135	6,7	09/10	LS
137	Deposit	Fill of 135	6,7	09/10	LS
138	Deposit	Bioturbation west of 135	6,7	09/10	LS
139	Deposit	Redeposited natural over 135	6,7	09/10	LS
140	Cut	Cut of linear	4	09/10	SR
141	Deposit	Fill of 140	4	09/10	SR
142	Deposit	Fill of 140	4	09/10	SR
143	Deposit	Fill of 140	4	09/10	SR
144	Deposit	Fill of 140	4	09/10	SR
145	Cut	Cut of linear	4	09/10	SR
146	Deposit	Fill of 145	4	09/10	SR
147	Deposit	Fill of 145	4	09/10	SR
148	Deposit	Fill of 145	4	09/10	SR
149	Deposit	Fill of 145	4	09/10	SR
150	Deposit	Fill of 109	5	09/10	LS
151	Cut	Cut of linear	12	15/10	SR
152	Deposit	Fill of 151	11	15/10	SR
153	Cut	Cut of shrub bowl	13	15/10	SR
154	Deposit	Fill of 153	13	15/10	SR
155	Cut	Cut of pit	14	15/10	SR
156	Deposit	Fill of 155	14	15/10	SR
157	Deposit	Fill of 155	14	15/10	SR
158	Deposit	Fill of 155	14	15/10	SR
159	Cut	Drain cut	5	15/10	SR

# Archaeology Wales Ltd Sample Register

Site Name:

# PLSF/14/EX

# Date: 02/10/14

<no.></no.>	Bulk/	Description and Context	Size	Date	Inits.
1	C14			02/10	LO
1	B	Lower leg area from inhumation (118)		03/10	LS
2	В	Base sample from grave (116)		03/10	LS
3	В	Central thorax from inhumation (118)		03/10	LS
4	В	Upper thorax from inhumation (118)		03/10	LS
5	В	Skull sample from inhumation (118)		03/10	LS
6	В	Charcoal rich lens (115)		03/10	LS
7	В	Possible cess (142)		09/10	SR
8	C14	Sample from (107) within cut [105]		01/10	SR
9	В	Relict topsoil (Pollen analysis potential)		15/10	SR
<u> </u>					
<u> </u>					





# Archaeology Wales APPENDIX VII: Osteological Report

# Osteological Analysis Puriton Solar Farm Somerset

Site Code: PLSF/14/EX NGR ST 31473 41762

> Report No 0510 December 2014

## Prepared for

Archaeology Wales Ltd, Rhos Helyg, Cwm Belan, Llanidloes, Powys, SY18 6QF

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## Summary

In December 2014 York Osteoarchaeology Ltd was commissioned by Archaeology Wales Ltd. to carry out the osteological analysis of one inhumed skeleton. This burial was excavated as part of the development of a site for a solar farm (ST 31473 41762) where there is known Roman activity. The date of the skeleton was thought most likely to be Roman, although an Iron Age date was also possible.

Osteological analysis found that the individual buried at Puriton was an infant around 40 weeks of age. The infant possibly had pathological lesions around the orbits and other elements of the skull, possibly due to thalassemia – a type of anaemia. Only two teeth were recovered: a mandibular molar and incisor; however the maxilla did not seem to have survived.

The site consisted of a series of ditches which were cut into the natural but had since silted up, and there was also evidence that one had been re-cut. Material from these ditches suggested a later Iron Age/Roman date. An occupation layer containing Iron Age and Roman material was spread over the silted up ditches. The skeleton (C.118) was found cut into the top of one of the silted up ditches and possibly into this late Iron age/Roman occupation layer.

## Acknowledgements

York Osteoarchaeology Ltd would like to thank Chris Smith of Archaeology Wales Ltd. for his help and support during this project. We would also express thanks to Dr Mary Lewis of the University of Reading, who provided advice on the pathological condition of this skeleton.



# **1.0 INTRODUCTION**

In December 2014 York Osteoarchaeology Ltd was commissioned by Archaeology Wales Ltd. to carry out the osteological analysis of one inhumed skeleton. This burial was excavated as part of the development of a site for a solar farm (ST 31473 41762). The date of the skeleton was thought most likely to be Roman, although an Iron Age date is possible.

The site measured 15m x 5m, and consisted of a series of ditches which were cut into the natural but had since silted up, and there was also evidence that one had been re-cut. Material from these ditches suggested a later Iron Age/Roman date. An occupation layer containing Iron Age and Roman material was spread over the silted up ditches. The skeleton (C.118) was found cut into the top of one of the silted up ditches and possibly into this late Iron age/Roman occupation layer. Directly to the east of this burial, deposited at the same level, the remains of an articulated pig leg and pottery were recovered. It was not clear whether this was deposited in the same cut as the skeleton and whether it was intended as part of the burial ritual. The individual was buried in an east-west orientation with the head in the east. The body was flexed and placed on its right side and from the photographs and plans provided it appears that the hands were most likely around the face or under the chin of the individual. The skeleton has not been dated, but based on the placement of the burial it was thought to be late Iron Age/Romano-British.

Table 1	Summary of	of archaeological	l information	of complete	skeletons
		$\mathcal{O}$			

Skeleton No	Position	Orientation	Artefacts	Feature Type	Date
118	Partially flexed, on right side	East-West	Possibly some pottery and articulated pig leg	Ditch	Presumed Romano- British/ Iron Age

## 1.1 AIMS AND OBJECTIVES

The aim of the skeletal analysis was to determine the age, sex and stature of the skeletons, as well as to record and diagnose any skeletal manifestations of disease and trauma.

## 1.2 METHODOLOGY

The skeleton was analysed in detail, assessing the preservation and completeness, as well as determining the age, sex and stature of the individual (Appendix A). All pathological lesions were recorded and described.

## 2.0 OSTEOLOGICAL ANALYSIS

Osteological analysis is concerned with the determination of the demographic profile of the assemblage based on the assessment of sex, age and non-metric traits. This information is essential in order to determine the prevalence of disease types and age-related changes. It is also crucial for identifying sex dimorphism in occupation, lifestyle and diet, as well as the role of different age groups in society.



# 2.1 PRESERVATION

Skeletal preservation depends upon a number of factors, including the age and sex of the individual as well as the size, shape and robusticity of the bone. Burial environment, post-depositional disturbance and treatment following excavation can also have a considerable impact on bone condition. Preservation of human skeletal remains is assessed subjectively, depending upon the severity of bone surface erosion and post-mortem breaks, but disregarding completeness. Preservation is important, as it can have a large impact on the quantity and quality of information that it is possible to obtain from the skeletal remains.

Surface preservation, concerning the condition of the bone cortex, was assessed using the seven-category grading system defined by McKinley (2004), ranging from 0 (excellent) to 5+ (extremely poor). Excellent preservation implied no bone surface erosion and a clear surface morphology, whereas extremely poor preservation indicated heavy and penetrating erosion of the bone surface resulting in complete loss of surface morphology and modification of the bone profile. The degree of fragmentation was recorded, using categories ranging from 'minimal' (little or no fragmentation of bones) to 'extreme' (extensive fragmentation with bones in multiple small fragments). Finally, the completeness of the skeletons was assessed and expressed as a percentage: the higher the percentage, the more complete the skeleton.

The bone condition of the skeleton was very good (Grade 1), with slight surface erosion causing only minimal loss of detail (Table 2) and it was 98% complete. There was only minimal fragmentation as some of the ribs were fragmented along with both fibulae.

Table 2         Summary of osteological and palaeopat	iological	results
---	-----------	---------

Skeleton	Pre	eservation <sup>*</sup>		Аде	Sex	Stature	Dental	Pathology	
No	SP	F	С	Age	SLA	(cm)	Pathology		
118	1 (Very	Minimal	98%	40	-	-	-	Possible pathological lesions on the	
	Good)			weeks				endocranial surface of both petrous	
								portions, pars basilaris, sphenoidal	
								body and both orbits	

\* Preservation: SP = surface preservation, graded according to McKinley (2004); F = fragmentation; C = completeness

## 2.2 MINIMUM NUMBER OF INDIVIDUALS

A count of the 'minimum number of individuals' (MNI) recovered from a cemetery is carried out as standard procedure in osteological reports on inhumations in order to establish how many individuals are represented by the articulated and disarticulated human bones (without taking the archaeologically defined graves into account). The MNI is calculated by counting all long bone ends, as well as other larger skeletal elements recovered. The largest number of these is then taken as the MNI. The MNI is likely to be lower than the actual number of skeletons which would have been interred on the site, but represents the minimum number of individuals which can be scientifically proven to be present.



The MNI was one, with bones from one non-adult present.

# 2.3 ASSESSMENT OF AGE

Age was determined using standard ageing techniques, as specified in Scheuer and Black (2000a; 2000b) and Cox (2000). For non-adults, age estimation is based on dental development and eruption, skeletal development (epiphyseal fusion) and long bone lengths (Scheuer and Black 2000b). In adults, age estimation largely relies on the presence of the pelvis and ribs and uses different stages of bone development and degeneration in order to calculate the age of an individual. It can be supplemented through examination of dental wear (Brothwell 1981). Age is split into a number of categories, from foetus (up to 40 weeks in *utero*), neonate (around the time of birth), infant (newborn to one year), juvenile (1-12 years), adolescent (13-17 years), young adult (ya; 18-25 years), young middle adult (yma; 26-35 years), old middle adult (oma; 36-45 years), mature adult (ma; 46+) to adult (an individual whose age could not be determined more accurately than that they were eighteen or over).

Skeleton (C.118) is a non-adult individual. Ageing was assessed by the measurement of the long bones and using data collected by Fazekas and Kosa (1978) and descriptions found in Scheuer and Black (2000). The long bones measured between 50mm and 74mm long, which would place the individual in the neonatal category (+40 weeks *in utero*). The mandibular molar was also used in assessing the age of the individual and based on the crown development was approximately one to three months of age (Moorrees *et al.* 1963).

# 2.4 SEX DETERMINATION

Sex determination was carried out using standard osteological techniques, such as those described by Mays and Cox (2000). Assessment of sex relies on the preservation of the skull and the pelvis and can only be carried out once sexual characteristics have developed, during late puberty and early adulthood. Due to the young age of the individual it was impossible to determine the sex.

## 2.5 METRIC ANALYSIS

Stature depends on two main factors, heredity and environment; it can also fluctuate between chronological periods. Stature can only be established in skeletons if at least one complete and fully fused long bone is present, but preferably using the combined femur and tibia. The bone is measured on an osteometric board, and stature is then calculated using a regression formula developed upon individuals of known stature (Trotter 1970).

Because of the young age of the individual, metric analysis was not conducted.

## 2.6 NON-METRIC TRAITS

Non-metric traits are additional sutures, facets, bony processes, canals and foramina, which occur in a minority of skeletons and are believed to suggest hereditary affiliation between skeletons (Saunders 1989). The origins of non-metric traits have been extensively discussed in the osteological literature and it is now thought that while



most non-metric traits have genetic origins, some can be produced by factors such as mechanical stress (Kennedy 1989) or environment (Trinkhaus 1978). A total of thirty cranial (skull) and thirty post-cranial (bones of the body and limbs) non-metric traits were selected from the osteological literature (Buikstra and Ubelaker 1994, Finnegan 1978, Berry and Berry 1967) and recorded.

No non-metric traits, either cranial or post-cranial were observed in this individual.

# 2.7 CONCLUSION

The osteological analysis of the skeletal remains established that the individual excavated from Puriton comprised of a neonate aged approximately 40+ weeks *in utero* when they died. Sex and stature were undetermined in this individual and they had no evidence for cranial or post-cranial metric traits.

# 3.0 PATHOLOGICAL ANALYSIS

Pathological conditions (disease) can manifest themselves on the skeleton, especially when these are chronic conditions or the result of trauma to the bone. The bone elements to which muscles attach can also provide information on muscle trauma and excessive use of muscles. All bones were examined macroscopically for evidence of pathological changes.

As infants undergo rapid growth after birth, which results in new bone forming, diagnosing pathological conditions can be difficult. This was the case with C.118. Woven bone was observed on the cranial bones, particularly the petrous portions of the temporal and the body of the sphenoid, both orbits and the *pars basilaris* of the occipital. Due to the severity of the woven bone it was unclear whether it was within the normal range of growth for individuals of this age. As a result, comparisons were made between this individual and another neonate. Dr Mary Lewis of the University of Reading, a palaeopathologists specialised in non-adult human remains, was also consulted and it was determined that the pitted bone was beyond the normal range of growth.

## 3.1 METABOLIC DISEASE

That this individual (C.118), suffered from some form of stress in its early life is clear, however, the exact cause of this stress is not completely determined. It is probable that this neonate suffered from some form of anaemia/other metabolic disease. The bony changes seen on this individual are not unlike those caused by thalassemia, a hereditary form of anaemia.

Thalassemia refers to a type of anaemia which is caused by a genetic mutation of the structure of the globin chains of haemoglobin. This results in a failure of the synthesis of haemoglobin, which in turn causes the formation of red blood cells with reduced haemoglobin which is vital for the transportation of oxygen in the blood (Aufderheide and Rodriguez-Martin 1998, 346-7). The most severe skeletal changes are seen in thalassemia major. In the skull this manifests itself as a 'hair-on-end' appearance of the cranial bones. This is due to a loss of trabecular bone with the thickening of the remainder (*ibid*. 1998 347).



This coarsened bone was recorded on some of the cranial bones of C.118. Pitted bone was seen bi-laterally on the ectocranial surface of the eve orbits (Plate 1). This was hyperporotic and quite vascular in appearance. It also seemed that the pars basilaris (base of the skull; Plate 2) of the occipital bone was affected ectocranially (on the outer surface) along with the body of the sphenoid. Both petrous portions of the temporal were affected as well (Plate 3). In comparison, evidence for metabolic diseases was recorded in the majority of the infants and children from the Roman site of Poundbury camp in Dorchester (Lewis 2010). Cribra orbitalia appeared to be the most common metabolic condition there, followed by evidence of scurvy and rickets (Lewis 2010, 408). Ectocranial lesions were seen on the crania of ten individuals at Poundbury, which was interpreted as signs of Vitamin C and D deficiency over anaemic changes (Lewis 2010, 408) and it is possible that this has affected this individual (C.118) as well. Evidence for thalassemia was also seen in two neonatal twins from a site in south-east Asia (Tayles 1996; Halcrow et.al 2012). Similar to C.118, these individuals showed signs of thickened pitted bone on the crania, although many of their long bones were also affected, which was not seen in C.118. However, there was no evidence in the long bones of any abnormal growth which would be



Plate 1 Left orbit with woven bone formation



associated with the mineral deficiencies mentioned above. Plate 2 Pars basilaris showing woven bone

Based on the appearance of the cranial bones, however, anaemia in the form of thalassemia major is perhaps a likely diagnosis. Thalassemia can cause heart problems and bone deformities, as well as being more prone to infections and iron overload, with high mortality (Borgna-Pignatti *et al* 2005).



3.2 CONCLUSION

**Plate 3** Right petrous portion with possible signs of thalassemia major

It is very clear that this individual (C.118) suffered from considerable stress during its short life. Hyperporotic bone was observed on the cranial bones, which could possibly indicate thalassemia major. It is possible that they also suffered from metabolic conditions. As there is a confliction with the ageing of this individual, due to the discrepancy of age ranges between measurement of the long bones and dental development, it is possible



have a negative impact on growth, as the child slows or stops growth during the period of stress (Lewis 2007, 66-67). It is possible that this individual had experienced such an episode and if it indeed suffered from thalassemia, then it would have also been more prone to contracting infection.

# 4.0 DENTAL HEALTH

Analysis of the teeth from archaeological populations provides vital clues about health, diet and oral hygiene, as well as information about environmental and congenital conditions.

All tooth positions were present on the mandible, although the maxilla did not seem to have survived. Given the age of the individual, no dental disease was evident on the two teeth recovered.

# 5.0 MORTUARY PRACTICE

As discussed by Philpott (1991) and Hope (1999), a large proportion of the evidence for Roman burial practices in Britain derives from urban cemeteries, usually dating to the third or fourth centuries AD. There is less evidence for burial practices in rural areas, where it is possible that change and assimilation of new Roman practices was more gradual (Hope 1999; Philpott 1991). At Puriton, the skeleton (C.118) was buried in a simple pit which had stone linings around the north, east and south sides where the head and upper body were positioned. The skeleton was buried in an east-west orientation with the head in the east. The body was flexed and placed on its right side and from the photographs and plans provided it appears that the hands were most likely around the face or under the chin of the individual. Based on the occupation layer into which it is cut, the individual is believed to be Late Iron Age/Romano-British in date.

As this appears to be an isolated burial it is difficult to accurately conduct any comparative analysis. However, a high proportion of graves in the Roman period were similarly aligned. O'Brien (1999, 5) has noted that the majority of these occurred in large organised cemeteries such as Cannington (Rahtz et al. 2000). Among rural burials, a north-south (or inverted) burial orientation seems to have been favoured, possibly indicating preservation of Iron Age traditions (O'Brien 1999, 5). Crouched burial, with legs flexed to the left or right, was also typical of the Iron Age period (*ibid*, 1), whereas extended burial became increasingly popular in the Roman period from the mid second century onwards (*ibid*, 5; Hope 1999, 55). Based on this it could be said that the individual at Puriton followed earlier traditions of burial. More accurate dating should be undertaken, however, before proper comparisons can be made.

# 6.0 DISCUSSION AND SUMMARY

The osteological analysis of the skeleton from Puriton, Somerset, has provided some information on the lives of the people in this area. The skeleton was nearly complete with very little surface erosion, which proved beneficial when recording data. At the time of writing the exact date of the skeleton was unknown, but presumed to be Romano-British, with the possibility it might be Iron Age. Radiocarbon dating of the remains



7

would be beneficial as the remains could be assigned to a particular period, thus enabling the funerary practices and pathology to be better understood.

The burial at Puriton contained a single skeleton. This individual was a non-adult aged over 40 weeks *in utero*, possibly up to a couple of months old. It was buried on its right side with the legs slightly flexed. From the photographs and plans provided it appeared that the arms were also flexed with the hands either around the facial area or under the chin. The skeleton was orientated in an east-west direction with the head in the east. This orientation is not uncommon in Iron Age burial practices, and may have been continued into the Roman period. It is not known whether there are other burials in the vicinity, so if this is an isolated burial it is possible this individual was given a different burial ritual to that of other members of the community. At Saxby Wold, in Lincolnshire, two Romano-British individuals (a young adult and a child), were also found buried in a ditch and it was also unclear whether these individuals were part of a larger cemetery (Caffell and Holst 2010).

The individual most likely suffered from poor health before its death and this was most likely a contributory cause. The result of this poor health was seen in the bones of the skull. Pitted bone was seen bi-laterally on the ectocranial (outer skull) surface of the orbits. This was hyperporotic and quite vascular in appearance. It also seemed that the *pars basilaris* of the occipital bone (base of skull) was affected ectocranially along with the body of the sphenoid. Both petrous portions of the temporal (ear parts of the skull) were affected as well. The exact cause of this infection is unknown, but it is likely to have been as a result of a metabolic condition. Based on descriptions in Aufderheide and Rodriguez-Martin (1998), the woven bone seems to resemble that associated with thalassemia major, which is a genetic type of anaemia associated with haemoglobin synthesis (*ibid*, 347), which causes major health issues, including early mortality. Given the age of the individual no dental disease was evident.

# 7.0 FUTURE RECOMMENDATIONS

It is recommended that the individual undergo AMS radiocarbon dating. Targeted radiocarbon dating of the skeleton would provide accuracy in assignation of the individual to a specific period. This would mean that the osteological and palaeopathological data could be compared to that from other skeletons from the same period.



#### References

- Aufderheide, A. C. and Rodríguez-Martín, C. 1998. *The Cambridge Encyclopedia of Human Paleopathology* (Cambridge)
- Berry, A.C. and Berry, R.J. 1967. 'Epigenetic variation in the human cranium', *Journal of Anatomy* 101 (2): 361-379
- Borgna-Pignatti, C., Cappellini, M. D., Stefano, P., Vecchio, G. C., Forni, G. L., Gamberini, M. R., ... & Cnaan,
  A. 2005. 'Survival and complications in thalassemia', *Annals of the New York Academy of Sciences*, 1054(1): 40-47
- Brothwell, D.R. 1981. Digging Up Bones (New York)
- Buikstra, J.E. and Ubelaker D.H. (eds) 1994. *Standards for Data Collection from Human Skeletal Remains* (Fayetteville)
- Caffell, A. and Holst, M. 2010. 'Osteological Analysis, Saxby Wold Windfarm, Lincolnshire', York Osteoarchaeology Ltd, Report No.0510
- Cox, M. 2000. 'Ageing adults from the skeleton', in M. Cox and S. Mays (eds), *Human Osteology in* Archaeology and Forensic Science (London): 61-82
- Fazekas, I.G. and F.Kosa, 1978. Forensic Foetal Osteology. Akad Kiado, Budapest.
- Halcrow, S., Tayles, N., Inglis, R. and Higham, C. 2012. 'Newborn twins from prehistoric mainland South-East Asia: birth death and personhood', *Antiquity* 86: 838-852
- Hope, V. M. 1999. 'The Iron and Roman ages: c. 600 BC to AD 400', in P. C. Jupp and C. Gittings (eds) *Death in England: An Illustrated History* (Manchester): 40-64
- Kennedy, K.A.R. 1989. 'Skeletal markers of occupational stress', in M.Y. Işcan. and K.A.R. Kennedy (eds), *Reconstruction of Life from the Skeleton* (New York):129-160
- Lewis, M. E. 2007. The Bioarchaeology of Children: Perspectives from Biological and Forensic Anthropology (Cambridge)
- Lewis, M.E. 2010. 'Life and Death in a Civitas Capital: Metabolic Disease and Trauma in the Children from Late Roman Dorchester, Dorset', *American Journal of Physical Anthropology* 142 (3): 405-16
- Mays, S. and Cox, M. 2000. 'Sex determination in skeletal remains', in M. Cox and S. Mays (eds), *Human* Osteology in Archaeology and Forensic Science (London): 117-130
- McKinley, J. I. 2004. 'Compiling a skeletal inventory: disarticulated and co-mingled remains', in M. Brickley and J. I. McKinley (eds), *Guidelines to the Standards for Recording Human Remains. IFA Paper No.* 7 (Southhampton and Reading): 14-17
- Moorrees, C. F. A., Fanning, E. A. and Hunt, E. E. 1963. 'Age variation of formation stages for ten permanent teeth' *Journal of Dental Research* 42: 1490-1502
- O'Brien, E. 1999. Post-Roman Britain to Anglo-Saxon England: Burial Practices Reviewed. British Archaeological Reports British Series 289 (Oxford)
- Rahtz, P., Hirst, S. and Wright, S. M. 2000. *Cannington Cemetery Excavations 1962-3 of Prehistoric, Roman, Post-Roman, and Later Features at Cannington Park Quarry, Near Bridgewater, Somerset* (London)
- Saunders, S.R. 1989. 'Non-metric variation', in M.Y. Işcan and K.A.R. Kennedy (eds) *Reconstruction of Life from the Skeleton* (New York): 95-108
- Scheuer, L. and Black, S. 2000a. 'Development and ageing of the juvenile skeleton', in M. Cox and S. Mays (eds), *Human Osteology in Archaeology and Forensic Science* (London): 9-22
- Scheuer, L. and Black, S. 2000b. Developmental Juvenile Osteology (San Diego)
- Tayles, N. 1996. 'Anemia, genetic diseases, and malaria in prehistoric mainland Southeast Asia', *American Journal of Physical Anthropology* 101: 11–27



Trinkhaus, E. 1978. 'Bilateral asymmetry of human skeletal non-metric traits', *American Journal of Physical Anthropology* 49: 315-318


## APPENDIX A: OSTEOLOGICAL AND PALAEOPATHOLOGICAL CATALOGUE

Skeleton No	118															
Preservation	Surface preservation = 1 (Very good); slight fragmentation															
Completeness	98%; some foot and vertebral elements absent															
Age	40 weeks in utero															
Sex	-															
Stature	-															
Non-Metric Traits	-															
Pathology	The individual showed signs of pathology, which was possibly caused by thalassemia major. The endocranial surfaces of the petrous portion of the temporal bone, the body of the sphenoid, the pars basilaris and the lateral (ectocranial) side of the orbits all had signs of these possible lesions. The lesions were hyperporotic in appearance and quite vascular. The degree of woven bone is possibly outside the range of normal growth.															
Dental Health	2 teeth present: mandibular molar and medial incisor, no maxilla was recovered															
	Right Dentition Left Dentition															
Present	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Calculus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maxilla	8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
Mandible	8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
Present	-	-	-	-	-	-	-	-	р		-	-	р	-	-	-
Calculus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

#### KEY:

Present - Tooth presence; am - ante-mortem tooth loss; pm - post-mortem tooth loss; p - tooth present; - - jaw not present; o - erupting Caries - Calculus; F - flecks of calculus; S - slight calculus; M - moderate calculus; H - heavy calculus; a - all surfaces; b - buccal surface; d - distal surface; m - mesial surface; l - lingual surface; o - occlusal surface

DEH - dental enamel hypoplasia; l - lines; g - grooves; p - pits

Caries - caries; s - small lesions; m - moderate lesions; l - large lesions

Wear - dental wear; numbers from 1-8 - slight to severe wear

# Archaeology Wales APPENDIX VIII: Archive Cover Sheet

# **ARCHIVE COVER SHEET**

### **Puriton Landfill Solar Farm**

Site Name:	Puriton
Site Code:	PLSF/14/EX
PRN:	-
NPRN:	-
SAM:	-
Other Ref No:	Planning Ref 42/14/00012/RB
NGR:	NGR ST 31473 41762
Site Type:	Green Field
Project Type:	Excavation
Project Manager:	Chris E Smith
Project Dates:	Sep-Oct 2014
Categories Present:	Iron Age - Roman
Location of Original Archive:	AW
Location of duplicate Archives:	-
Number of Finds Boxes:	3
Location of Finds:	-
Museum Reference:	-
Copyright:	AW
Restrictions to access:	None

# Archaeology Wales



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