

Allasdale Dunes, Barra Western Isles, Scotland

Archaeological Evaluation and Assessment of Results



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Contents

Summary

Acknowledgements

1	BACKGROUND.....	1
1.1	Introduction.....	1
1.2	Site Location, Topography and Geology and Ownership	1
1.3	Archaeological Background	2
	<i>Neolithic</i>	2
	<i>Bronze Age</i>	2
	<i>Iron Age</i>	4
1.4	Previous Archaeological Work at Allasdale	5
2	AIMS AND OBJECTIVES.....	6
3	METHODS.....	7
3.1	Geophysical Survey	7
3.2	Evaluation Trenches	7
4	RESULTS.....	8
4.1	Introduction.....	8
4.2	Geophysical Survey (Figures 1 and 2).....	8
	<i>Gradiometer and Magnetic Susceptibility Survey</i>	8
	<i>Resistance Survey</i>	8
	<i>The Viking Burial Mound</i>	9
4.3	Evaluation Trenches	9
	<i>Area 1 (Figure 3 & 4)</i>	9
	<i>Area 2 (Figure 5)</i>	10
	<i>Area 3 (Figure 6)</i>	12
	<i>Trench 4 (Figure 7)</i>	12
5	FINDS	13
5.1	Introduction.....	13
5.2	Pottery	13
5.3	Stone	15
5.4	Human Bone	15
5.5	Animal Bone	21
5.6	Marine Shell.....	22
5.7	Other Finds.....	22
6	PALAEO-ENVIRONMENTAL ASSESSMENT	23
6.1	Introduction.....	23
6.2	Methods.....	23
6.3	Charred Plant Remains	23
6.4	Charcoal.....	24
6.5	Molluscs and Foraminifera	24
6.6	Fish and Small Mammal Bones	25
6.7	Summary.....	25

	6.8 Recommendations	26
7	DISCUSSION.....	26
	7.1 The Deflation Hollow	26
	<i>Late Neolithic –Early Bronze Age</i>	<i>26</i>
	<i>The burials</i>	<i>27</i>
	<i>Early Iron Age.....</i>	<i>30</i>
	7.2 The Wheelhouse	30
	7.3 A Viking Burial Mound?	31
8	RECOMMENDATIONS	32
9	ARCHIVE	32
10	REFERENCES	33

Appendix 1: Area and Context Summaries

Tables

Table 1:	Radiocarbon results
Table 2:	Finds totals by material type and by trench
Table 3:	Summary of results from analysis of human bone
Table 4:	Assessment of the charred plant remains and charcoal

Figures

Figure 1:	Site location plan
Figure 2:	Geophysical survey results
Figure 3:	Excavated burials in Areas 1 and 3
Figure 4:	Area 1 Plate 1: Cist grave 103 Plate 2: Cist grave 112 Plate 3: Cultivation layer 110 and ard mark groups 118, 120 and 122
Figure 5:	Area 2 Plate 4: Cut 204 Plate 5: Roundhouse group 275 Plate 6: Structure 256 Plate 7: Roundhouse group 275 Plate 8: Roundhouse group 276
Figure 6:	Detail of graves in Area 3 Plate 9: Grave 306 and skeleton 305 from the east Plate 10: Grave 303, skeleton 302 and cremation burial 301 from the west Plate 11: Grave 303, 300 and 302 following removal of 301 from the east
Figure 7:	Trench 4 Plate 12: Trench 4 from the south showing door jamb 419, bar-hole 430 in wall/pier 418, wall 413 and pier 415 Plate 13: North facing elevation of wall/pier 416, bar-hole 429 and door jamb 417 Plate 14: Ante-chamber 420 from south-east Plate 15: Trench 4 from the east, showing entrance into wheelhouse group 427

Allasdale Dunes, Barra, Western Isles, Scotland

Archaeological Evaluation and Assessment of Results

Summary

In May 2007, an archaeological evaluation was undertaken by Channel 4's 'Time Team' within Allasdale Dunes, on the island of Barra in the Outer Hebrides (centred on NGR 065610 802830), to investigate a number of cist graves and stone structures eroding out of the sand dunes.

The aim of the evaluation was to investigate the nature of the burials and structures within a large sand dune blow-out, and to add further information to the results of an earlier rescue excavation. The project also aimed to investigate a large earthen mound nearby, considered by local tradition to be a Viking burial mound.

The evaluation revealed stratified archaeological deposits potentially dating from the Late Neolithic through to the Iron Age. These included a possible Neolithic building and associated cultivation soil; a number of Early Bronze Age burials within stone-lined cists, including inhumations and cremations, radiocarbon dated to 1880-1520 BC; and two Iron Age roundhouses, the earliest dating to 750-400 BC.

Evidence of Late Iron Age activity sealed beneath the sand dunes near the blow-out was identified through the geophysical survey, which revealed the well preserved remains of a very large wheelhouse, the largest yet found on Barra. This wheelhouse was initially identified in the 1950s but had been lost beneath the shifting sand dunes.

Investigation into the possible Viking burial mound identified no evidence of a boat or buried archaeological structures, and it appears that this is merely a sand dune.

Allasdale Dunes, Barra, Western Isles, Scotland

Archaeological Evaluation and Assessment of Results

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The geophysical survey was undertaken by John Gater, Jimmy Adcock and Emma Wood of GSB Prospection. The field and topographic survey was undertaken by Henry Chapman of the University of Birmingham. The excavation strategy was devised by Mick Aston of Bristol University and Mike Parker Pearson of Sheffield University. The on-site recording was co-ordinated by Steve Thompson and Gail Wakeham, both of Wessex Archaeology.

The excavations were undertaken by Time Team's retained archaeologists, Phil Harding (Wessex Archaeology), Kerry Ely, Ian Powlesland, Naomi Sewpaul, Tracey Smith and Matt Williams, with assistance from Jacqueline McKinley, Helen Geake, Kate MacDonald, Ian McHardy, Carol Knott, Richard Madgewick, Colin Merrony, Michael Heaton, Helen Smith (Bournemouth University), Jacqui Mulville and Niall Sharples (Cardiff University). On-site pottery identification was carried out by Mike Parker Pearson.

The archive was collated and all post-excavation assessment and analysis undertaken by Wessex Archaeology. This report was compiled by Steve Thompson, with specialist reports prepared by Matt Leivers and Lorraine Mephram (finds), Jessica Grimm (animal bone), Jacqueline McKinley (human bone), and Chris Stevens (palaeoenvironmental). The foraminifera were identified by Jack Russell and additional comments on the nature of the sediments within the cremation related deposits were supplied by Cathie Barnett and David Norcott. The illustrations were prepared by Kenneth Lymer. The post-excavation project was managed on behalf of Wessex Archaeology by Lorraine Mephram.

The work benefited from discussion on site with Western Isles Archaeologist Mary Macleod, Mike Parker Pearson and Keith Branigan (Sheffield University), Niall Sharples, Helen Smith, Phil Harding, Jacqueline McKinley, Andrew Fitzpatrick (Wessex Archaeology) and Mick Aston.

Finally thanks are extended to the Scottish Executive Environmental and Rural Affairs Department (SEERAD), Ian and Nancy MacNeill and Archie McDonald of the Grazing Committee for providing permission for the evaluation to take place.

Allasdale Dunes, Barra, Western Isles, Scotland

Archaeological Evaluation and Assessment of Results

1 BACKGROUND

1.1 Introduction

1.1.1 Wessex Archaeology was commissioned by Videotext Communications Ltd to undertake a programme of archaeological recording and post-excavation work on an archaeological evaluation undertaken by Channel 4's 'Time Team' at a site within the Allasdale Dunes, Barra, Western Isles, Scotland (hereafter the 'Site') (**Figure 1**).

1.1.2 This report documents the results of archaeological survey and evaluation undertaken by Time Team, and presents an assessment of the results of these works.

1.1.3 Where there is an alternative spelling, place names within this report will be referred to by their anglicised spelling (Allasdale, Barra, Vatersay) rather than Gaelic (Allathasdal, Barraigh, Bhatarsaigh), since the former are in more common usage.

1.2 Site Location, Topography and Geology and Ownership

1.2.1 The Site is within the Allasdale Dunes on the western coast of the Isle of Barra. Barra and its smaller neighbours (the Bishop's Isles) including Vatersay, Sandray, Pabbay, Migulay and Berneray are the southernmost and westernmost islands of the Western Isles, c.130km west of Oban and c.180km south of the Butt of Lewis (the most northerly point of the Western Isles). These islands are also the smallest of the Western Isles - Barra measures roughly 8km wide and the same in length but for the Eólaigearraidh peninsula which extends a further 4km to the north. Eólaigearraidh and small areas of the west coast have developed the sand-based machair pastures, seen more extensively north of Barra. The machair comprises layers of wind-blown shell sand, stabilised by the growth of marram grass which provide fertile grazing land. The centre of the island is dominated by a series of high hills and peatlands, with the highest peak (Sheabhal) measuring 383m above Ordnance Datum (aOD) (Branigan 2007, 6; Videotext Communications 2007, 2).

1.2.2 The Site is located within an area of machair sand dunes, in the coastal area of the dispersed settlement of Allasdale, approximately 3km north-west of Castlebay and 5km south-west of Eólaigearraidh, and is centred on NGR 065610 802830 at a height of c.10m aOD.

1.2.3 The underlining geology is Lewisian gneiss overlain by wind-blown shell sand.

- 1.2.4 The Site is currently owned by the Scottish Executive Environmental and Rural Affairs Department (SEERAD), with former owners Ian and Nancy MacNeill retaining certain rights to the land, including the right to grant permission for archaeological works. The land is currently in use for animal grazing under the tenancy of the Grazing Committee of Allasdale.
- 1.2.5 The Site was exposed following a sand dune blow-out (during which holes appear within the marram grass and the exposed sand is subsequently blown away by the constant winds from the Atlantic). The site had been previously partly sealed by c.4m of sand dune.

1.3 Archaeological Background

- 1.3.1 Like many of the Western Isles, Barra is rich in prehistoric archaeological sites and numerous archaeologists and research projects have been attracted to the area. The most extensive of these has been the Sheffield University Environmental and Archaeological Research Campaign in the Hebrides (SEARCH) completed in 2000. When work began in 1988 the number of sites recorded on Barra and the Bishop's Isles was less than 80, but by the end of the project nearly 2000 sites had been identified and over 50 excavated (Branigan & Foster 2002, 11).

Neolithic

- 1.3.2 The Neolithic settlement of Barra and the Bishop's Isles is believed to have occurred around 4000 BC with occupation sites identified at Buile nam Bodach, on the eastern side of the island; on the small isolated island of Bioruaslum; on the western limit of Vatersay; and at Alt Chrisal (also known as Alt Easdal) on the south edge of Barra overlooking Vatersay (Foster 1995, 49-160; Branigan 2007, 10).
- 1.3.3 Evidence of burial during the Neolithic is provided by a number of passage graves, including Beinn Orasaigh overlooking the inlet of Bágh Chornaig on the north-west coast of Vatersay, and the chambered cairn of Dùn Bharpa, 1km north east of the township of Baile ne Creige on the western side of Barra.
- 1.3.4 A number of standing stones believed to be Neolithic are located on Barra, with sites at Beul a' Bhealaich, close to the centre of the island, and at Breibhig at the south-east corner of the island, and some ten stone circles have also been recorded on the islands. The modest stone circles are often best described as stone rings - sites include Breibhig and North Bay at the end of Bágh Shiarrabhagh, at the north west of Barra (Branigan 2007, 115-18).

Bronze Age

- 1.3.5 Branigan (2007, 19) states that '*referring to the period from around 2000BC to about 500BC as the Bronze Age is, in the case of Barra, optimistic if not positively misleading. The totality of bronzework from this period so far discovered in these southern islands is half a small cloak fastener*'. The cloak fastener fragment came from within a small kerbed cairn on Huilish Point on the western side of Vatersay, overlooking West Bay beach. Pottery

recovered from within the cairn appeared to be Middle to Late Bronze Age and this was confirmed by OSL dating to 1450-650BC (Branigan and Foster 2002, 66).

- 1.3.6 On Barra some 14 cairns have been recorded, and these are divided into three types: paved, bordered, and kerbed. On Vatersay some 29 kerbed and seven bordered cairns have been recorded. The more southerly islands of the Bishop's Isles are also more densely covered in Bronze Age cairns than Barra considering their size, with Sandray having ten kerbed, Pabbay seven kerbed and Mingulay 19 kerbed and three bordered cairns. None have yet been found on Berneray (Branigan and Foster 2002, 67).
- 1.3.7 Further evidence of burial during the Bronze Age on Barra comes in the form of stone cist graves. Thirteen are known on Barra but of these only two have been excavated - one of these was dated to the Bronze Age, but neither contained human remains (Cook 2006, 2 after Branigan and Foster 2000, 328-30). In the Western Isles a number of cist graves have been excavated such as on the Cnip headland on the Valtos peninsula on the west side of Lewis, where in 1992 the remains of mature male skeleton were revealed in a short cist adjacent to a multi-period cairn. Radiocarbon dating of the skeleton placed it in the middle of the second millennium BC, the same date as an urned cremation burial which had been placed within the cairn (Dunwell *et al.* 1995, 279-88).
- 1.3.8 Cist graves can be divided into two categories: short graves such as the example at Cnip, which measured *c.*1.2m by 0.70m (Dunwell *et al.* 1995, 280), and elongated examples that are apparently unique to Barra. Eight elongated cists were identified at Bretadale at the south west corner of Barra, measuring up to 21.8m by 9.2m and possibly representing multiple inhumation burials (Cook 2006, 2).
- 1.3.9 The identification of Bronze Age settlements on Barra and the Bishop's Isles through surface remains alone is difficult, and little excavation into this period of settlement has occurred. A number of roundhouse structures near to the site of 18 Bronze Age kerbed cairns, located to the west of Tresivick looking south over West Bay on Vatersay, were thought to be part of a contemporary settlement, although by comparison to other excavated sites these appear too large and may instead be Iron Age. At the Borge Valley on the west of Barra a Bronze Age/Iron Age roundhouse was excavated which appeared to overlie earlier features and structures; it is therefore probable that settlement within small roundhouses occurred during this period (Branigan and Foster 2002, 67-8).
- 1.3.10 Excavations at Cladh Hallan on South Uist identified figure-of-eight or double roundhouses and multi-cellular houses built into the sand of the machair regions of the island. On Pabbay, Northton on Harris and Rosinish on Benbecula a number of oval-shaped Bronze Age houses have been identified and it is possible that similar houses exist below the machair on Barra (Branigan and Foster 2002, 69-70; Parker Pearson *et al.* 2004, 65).

Iron Age

- 1.3.11 Branigan (2007, 24) states that *'the beginning of the Iron Age on Barra and its satellite islands is marked neither by any notable change of lifestyle nor by the acquisition of tools or weapons in a new material... even changes in pottery...are slight and gradual. But in the last two centuries BC lifestyles seem to change markedly as new types of houses appear in several different forms and in considerable numbers.'*
- 1.3.12 The houses vary in shape and size, being oval or round and ranging between 8m and 12m in diameter - sites include Skipisdale on Mingulay and between Ben Cliad and Ben Vaslain on north Barra (Branigan and Foster 2002, 78). These roundhouses are not much different from the earlier Bronze Age houses, although on the islands these were superseded by more substantial and complex structures, aisled houses and wheel houses. Aisled houses can be defined as circular houses with free-standing radial piers, usually Middle Iron Age in date, and constructed within holes dug into the machair, and therefore found close to the sea, although on Barra most examples are built above ground. A wheelhouse is similar in form, except that the radiating piers join to the surrounding perimeter wall, which form individual cells within the building. Many wheelhouses, such as that at Alt Chrisal, began as aisled houses but had the gap between the piers and the perimeter wall filled, so creating wheelhouses (Branigan and Foster 2002, 82, 156-7). Both wheelhouses and aisled houses are predominantly Middle Iron Age in date (c.200 BC-400 AD).
- 1.3.13 The Iron Age in the Western Isles also saw the construction of the massive stone-built towers referred to as brochs or duns. Brochs are part of a wider architectural tradition of massive stone construction that is unique to the Atlantic Scottish Iron Age. The exact chronology of these complex sites is still hotly debated, with some academics arguing that they are a form of monument evolved from the Atlantic roundhouses found in north and west Scotland and that their construction begins as early as c.400-200 BC, and others stating that they may date as late as the 3rd and 4th centuries AD. These structures are very large, stone-built dwellings, or drystone towers, comprising more than one storey and internal staircases. Over 500 brochs are known to exist (although this number depends on the definition of a broch) and these are mainly restricted to the north of mainland Scotland and the northern Isles, western Scotland and the Hebrides (Ritchie 1988; Armit 1990).
- 1.3.14 Brochs on the Western Isles appear to be rather later than those on the Northern Isles; sites such as Dun Vullan on South Uist are radiocarbon dated to around 150-50BC, while Dunan Ruadh on Pabbay and Dun Cuier on Barra are dated to the 1st and 2nd centuries AD (Parker Pearson *et al.* 2004, 88). Other brochs such as that on the Borgh peninsula, just south of the Site at Allasdale, was dated to the Iron Age through pottery analysis, but a more precise date has not been achieved.

1.4 Previous Archaeological Work at Allasdale

- 1.4.1 The SMR for this area reveals that the site was first noted in 1959 by CF Tebbutt who wrote to the Ordnance Survey about a number of newly exposed shell middens and possible structures observed on the Allasdale Dunes.
- 1.4.2 SMR notes show that subsequent investigation in the 1960s revealed more of Tebbutt's putative wheelhouse: *'sand dunes at Allasdale were found to contain the remains of a circular stone built structure lying 15ft below the present ground level. There was a kitchen midden in association with this. From around the midden came many sherds of broch type pottery. It is probable that the site is that of a wheel house. A short distance away another midden was found at a depth of 20ft below ground level. From this came sherds of thicker coarser ware along with some bone tools and a bone toggle. Several flakes of flint were also found'* (Videotext Communications 2007, 3).
- 1.4.3 A few years later the wheelhouse was visited by the Ordnance Survey, who observed that *'the vague remains of a possible wheelhouse can be seen, in an area of sand dunes. The perimeter of the structure and a narrow passage on the east side are outlined in the sand by a single course of stones barely 0.10m high, giving the structure and oval shape measuring c.16m NW-SE by c.13m transversely. Within are a rickle (loose heap) of small stones, and the remains of a shell-midden which extends beyond the south side for c.20m. To the north and south of this structure are the remains of stone walls which may be associated'* (Videotext Communications 2007, 3).
- 1.4.4 The SEARCH project identified 60 archaeological sites and find spots in the area surrounding the Site at Allasdale (SEARCH Project Zone C) including the wheel house excavated and published by Young (1952) at Tigh Talamhanta. By 1998 the site identified by Tebbutt had been almost completely covered by wind-blown sand, although it may have been located in the SEARCH project as site C60*, at approximate NGR 065600, 802900, described as *'An arc of stone walling observed by OS close to find-spot of Iron Age pottery and bronze (C52): possible wheelhouse?'* (Branigan and Foster 2000, 36).
- 1.4.5 During 2004-5 a series of violent storms caused a large-scale blow-out of the sand dunes, resulting in a large deflation hollow. Several local residents began to recover pieces of bone and midden material in the exposed area, and the tops of several stone settings became visible. Following the identification of human bone, Dr Mary Macleod, the Western Isles Archaeologist, was contacted under the terms of the Historic Scotland Human Remains Call-Off Contract, and subsequently AOC Archaeology were commissioned to undertake a programme of rescue survey and excavation.
- 1.4.6 The AOC survey (Cook 2006) identified several stone structures within the Allasdale dunes, including the site of the putative wheelhouse recorded by Tebbutt in the 1950s. The excavation undertaken in the area of the sand dune

blow-out where the human remains were revealed identified *'four short cists which were being actively eroded and [on excavation] found to contain 13 individuals comprising a male, a female, and a mixture of neo-natal and child bones. All of the bodies were radiocarbon dated to between 1880-1490 (2 sigma) BC'*, i.e. the Early Bronze Age. The radiocarbon dating pointed to an interment period of 200 years, suggesting a family group, and multiple inhumation burials within cists supports this hypothesis (Cook 2006, 1 and 6).

- 1.4.7 The known cemetery covered an area of 11m E-W and 5m N-S and appears to focus around a low mound, with two of the excavated cists being cut into this feature. Clearly stratigraphically earlier than the cists, the low mound was not excavated at this stage, and was therefore not fully understood. Cook (2006, 22) states that *'during the Bronze Age it was not uncommon for either funerary monuments or cemeteries to be constructed on either a natural mound or ridge'* such as at West Linton in the Scottish Borders (Hunter 2000) and Holly Road in Fife (Lewis and Terry 2004) or *'alternatively on the site of an earlier burial or monument'* such as Cnip (Dunwell *et al.* 1995; Close-Brooks 1995).
- 1.4.8 Also identified within the area of the sand dune blow-out were a number of stone alignments and structures, tentatively interpreted as buildings; these structures were not investigated by excavation in 2005.
- 1.4.9 In summer 2006 two visitors to Barra, Christopher and Rachel Smith from Birmingham University, observed that since the AOC excavation considerable erosion of the site had occurred. When staff from Time Team visited the site in March 2007, it was clear the erosion had progressed yet further (Smith and Smith 2006; Videotext Communications 2007, 4).

2 AIMS AND OBJECTIVES

- 2.1.1 A project design for the work was compiled on behalf of Videotext Communications (2007), providing full details of the research aims and methods. A brief summary is provided here.
- 2.1.2 The project aimed to investigate:
 - The remaining cist graves and structures identified but not excavated by AOC Archaeology in the area of the sand dune blow-out.
 - A mound on the north-east side of the site regarded in local tradition as a Viking burial or ship burial.
 - Suitable targets identified either through the topographical or geophysical survey which might help to ascertain the date, character, condition and extent of the underlying archaeology.

3 METHODS

3.1 Geophysical Survey

- 3.1.1 Prior to the excavation of evaluation trenches, a geophysical survey was undertaken by GSB Prospection across the Site using a combination of resistance and magnetic survey as well as ground penetrating radar (GPR). The survey grid was set out by Dr Henry Chapman of Birmingham University and tied in to the Ordnance Survey grid using a Trimble real time differential GPS system.

3.2 Evaluation Trenches

- 3.2.1 The deflation hollow created by the sand dune blow-out was divided into three areas (**Figure 1**). Area 1 was located towards the western end of the hollow, over the stone settings and the raised mound on which they were situated. Area 2 was located at the eastern end of the hollow in order to investigate the stone-built structures identified during the AOC survey and a number of burnt deposits. These two areas were clearly defined. Area 3 was assigned to the remainder of the hollow, to investigate the features most at risk from erosion. A single trench (Trench 4) was excavated c.100m north-east of Area 2, to investigate the site of the putative wheelhouse identified by Tebbutt and AOC, and accurately located by GSB.
- 3.2.2 All areas were excavated by hand and the excavated spoil scanned by metal detector.
- 3.2.3 All archaeological deposits were recorded using Wessex Archaeology's *pro forma* record sheets with a unique numbering system for individual contexts. Trenches were located using a Trimble real time differential GPS survey system. All archaeological features and deposits were planned at a scale of 1:20 with sections drawn at 1:10. All principal strata and features were related to the Ordnance Survey datum.
- 3.2.4 A full photographic record of the investigations and individual features was maintained, utilising colour transparencies, black and white negatives (on 35mm film) and digital images. The photographic record illustrated both the detail and general context of the archaeology revealed and the Site as a whole.
- 3.2.5 At the completion of the work, all areas were reinstated using the excavated material. The deflation hollow was re-covered with the excavated sand, and sealed with a layer of sea weed and seeded with grass seed to prevent further erosion
- 3.2.6 A unique site code (ADB 07) was issued prior to the commencement of works. The work was carried out on the 22nd to 25th May 2007. The archive and all artefacts were subsequently transported to the offices of Wessex Archaeology in Salisbury where they were processed and assessed for this report.

4 RESULTS

4.1 Introduction

- 4.1.1 Details of individual excavated contexts and features, the full geophysical report (GSB Prospection 2007), and details of artefactual and environmental assessments, are retained in the archive. Details of the excavated sequences can be found in **Appendix 1**.

4.2 Geophysical Survey (Figures 1 and 2)

- 4.2.1 The sand dune terrain proved, as expected, difficult for geophysical survey although the grassed areas were more conducive. In total three areas were assessed using Magnetic (Gradiometer and Magnetic Susceptibility), Resistance and Ground Penetrating Radar, recorded as GSB Area 1, GSB Area 2 (A, B, C and D) and GSB Area 3 (A and B).

Gradiometer and Magnetic Susceptibility Survey Area 1

- 4.2.2 The responses from this area are typical of those found where igneous geology is present; as a consequence any archaeological features will have been masked by the strong magnetic responses.

Area 2

- 4.2.3 The four survey blocks within this area (A-D) were located in and around the main excavation area. Areas A-C show only responses from the geology whilst within block D a clear circular anomaly can be seen. This was confirmed by excavation (Trench 4) to be a wheelhouse. Within the structure anomalies can be seen, which coincide with internal divisions. There is also an area of increased magnetic response surrounding the wheelhouse, and this probably reflects midden deposits outside the structure.

- 4.2.4 Two linear responses coincide with former stone field boundaries.

Area 3

- 4.2.5 The aim of the two blocks within Area 3 was to investigate a large steep-sided but flat-topped mound to see if it was artificial or whether there were any associated archaeological features. As with Area 1, very strong responses of a geological origin have been detected, together with a few scattered anomalies that are likely to be modern ferrous debris. No archaeological anomalies have been recorded.

Resistance Survey

- 4.2.6 A small block of resistance survey was carried out over the wheelhouse. The results show a curving anomaly but unfortunately the data do not show the structure in any more detail. This is probably due to the large amounts of stone rubble.
- 4.2.7 Other areas of high resistance within the data are thought to relate to the wind-blown sand and geology, but given the context of the site an archaeological origin cannot be ruled out.

The Viking Burial Mound

- 4.2.8 The large mound situated at approximately 420m northeast of the main excavation area was investigated using a combination of GPR and augering. Both the GPR and the auger survey indicated that this was not a man-made structure and no evidence of burial was identified. The structure appeared to be a natural sand dune.
- 4.2.9 The GPR survey was, however, successful in the identification of the buried ancient land surface.

4.3 Evaluation Trenches

Area 1 (Figure 3 & 4)

- 4.3.1 Area 1 was located towards the western end of the deflation hollow to investigate several stone settings clearly visible on top of a low mound, including cist graves previously excavated by AOC. Although the structures were visible, they were covered in places by a thin layer of wind-blown sand derived from the open faces of the blown-out sand dune; this deposit was removed to reveal stratified archaeological features and deposits.
- 4.3.2 The mound consisted partly of natural wind-blown sand (102) and partly of overlying deposit (110). Deposit (110) had been cut through by a series of ard marks, recorded as (118), (120) and (122), and was thus interpreted as a cultivation soil, evidence of agricultural activity predating the cist cemetery (**Plate 3**). This cultivation deposit is possibly contemporaneous with the earliest stratified structure identified in Area 2 (see below). The cultivation deposit was not excavated and no dating evidence was recovered, but as the deposit is cut by Early Bronze Age cist graves, it is likely to be Early Bronze Age in date, although it could be Late Neolithic.
- 4.3.3 Subsequent to this agricultural activity a cist cemetery was established here; the stratigraphic relationship was established by the cutting of one of the cist graves through cultivation deposit (110). Five stone-lined graves were revealed within Area 1, three of which had been previously identified in the AOC excavation of 2005. The graves were recorded as (103), (106), (112), (127) and (128). Cist graves (127), (128) and (106) had been fully excavated and recorded in 2005 (as, respectively, AOC Cists 2, 3 and 4). Of these, grave (127) was seen to cut cultivation soil (110). During this programme of work, grave (106) was found to contain disarticulated skeletal remains. This material was found and reburied by Christopher and Rachel Smith following their visit in 2006 (Smith and Smith 2006, 5), but this has cast doubt on what was still *in situ* and what may have been reburied in recent times.
- 4.3.4 The first of the undisturbed cist graves excavated by Time Team was grave (103), which was ovoid in shape with a lining of Lewisian gneiss stones (104) (**Plate 1 & Figure 3**). The majority of the lining stones were upright although a number were horizontal, giving the impression of the cist originally having a corbelled roof sealed with a layer of peat turves. Within grave (103) was a single inhumation burial (111), the body tightly flexed, almost crouched, lying on its right side, with its hands together in front of its

face. The body had slumped back slightly and the mandible had maintained its position, but the rest of the skull had slumped round to the north, indicating that the head probably lay on some form of pillow and that movement occurred after decomposition. A sample of bone from this skeleton was radiocarbon dated to 1880-1630 BC, the Early Bronze Age (**Table 1**). Overlying the burial were two backfill deposits, the earlier (116) comprising wind-blown sand, and the later (105) an organic-rich deposit.

- 4.3.5 The second cist grave (112) was ovoid in shape and lined with vertical Lewisian gneiss stones (113), a number of which were horizontal, again suggesting a corbelled roof (**Plate 2 & Figure 3**). Within (112) were the remains of inhumation burial (114), the body flexed and lying on its right side, with its hands under the left femur, and feet tucked under the pelvis, with the hands and feet mixed. Wind-blown sand and organic backfill deposits covered this burial, similar to those in cist grave (103).

Area 2 (Figure 5)

- 4.3.6 In the north-west corner of the trench, a possible burning deposit (271) appeared to overlie the natural wind-blown sand (282), which in turn overlay the natural Lewisian gneiss bedrock. Deposit (271) was only partially revealed in a small sondage and its nature is not fully understood.
- 4.3.7 Cutting deposit (271) was (269), the possible foundation trench for a probable stone roundhouse wall (256). Only a single course of stonework survived (**Plate 6**).
- 4.3.8 Adjacent to wall (256) was layer (273), a reworked natural deposit with organic components possibly indicating the beginnings of topsoil/machair formation. This natural wind-blown deposit had built up within and around the collapsed roundhouse and was reworked by later surface activity. In the centre of the roundhouse, overlying (273), was a burnt deposit (272), a possible single-use fire in the shelter of the collapsed roundhouse. This burning was sealed by rubble collapse deposit (279) derived from (256).
- 4.3.9 It is possible that structure (256) was broadly contemporaneous with the cultivation deposit (110) in Area 1, for as (110) predated the cist graves, so deposit (273), overlying the structure, was cut by a number of possible cremation-related features and deposits.
- 4.3.10 Six possible cremation-related features were identified. Four of these – stone-lined cists (204) (**Plate 4**), (205), (210) and (274) - cut (273), while the other two ((208) and (213)) comprised dumps of possible cremation-related material lying directly on layer (273).
- 4.3.11 Interpretation of these features and deposits is still somewhat unclear; the deposits are unlikely to be remnants of pyre sites as they are so small, and are unlikely to be hearths as they are not within buildings. The deposits do, nevertheless, appear to be cremation-related - they were very similar to deposit (301), which overlay skeletal remains (302) in grave (303) (see below). However, subsequent examination of the infilling deposit (259/260) in stone-lined cist (204) revealed that the burnt deposits comprised burnt

turves. The turf may have derived from beneath the pyre site, and could have been used to cap the features.

- 4.3.12 A number of the cremation-related features had been overlain by (255), an extensive sand deposit with evidence of organic components, suggesting human activity. This deposit extended to the east, where it was overlain by (217), a possible later cultivation deposit very similar to (110) in Area 1.
- 4.3.13 Deposit (255) extended to the northern limit of Area 2, and was cut by several small features adjacent to structure (256). Features (257) and (266) were small hollows, possibly associated with an Iron Age pottery vessel that was located nearby in (255). No other dating evidence was recovered.
- 4.3.14 At the southern end of the trench were two roundhouses. The earlier of the two was recorded as Group (275) and was composed of walls (223) and (224) (**Plates 5 & 7**). Between these walls was an east-facing entrance between parallel walls (225) and (226) which formed a porch. Only the eastern half of the roundhouse survived; the western half had been lost to erosion within the deflation hollow. Rubble deposits (280) and (281) represented all that remained of this part of the structure.
- 4.3.15 A section through the internal deposits within the roundhouse showed natural wind-blown sand (282) sealed by deposit (248/249), a reworked natural layer. A series of inter-cutting small pits cut through deposit (248): pit (247), cut by (277), in turn cut by (244). Pit (244) contained the disarticulated remains of a sheep/goat (262) that had been deliberately buried beneath the later floor surfaces of the roundhouse. These remains were radiocarbon dated to 750-400 BC, the Early Iron Age (**Table 1**).
- 4.3.16 Possible floor levelling layer (242) sealed the animal burial, and was in turn overlain by rammed peat floor surface (238), the earliest identifiable floor surface within the roundhouse. Following a number of probable levelling or patching deposits, floor (238) was replaced by floor surface (233), and then by floor surface (216). Surface (216) was overlain by occupation layer (215), a mix of wind-blown sand and organic material, in turn sealed by the latest floor surface (214). The occupation layer (215) extended through into the porch, where it was recorded as (253).
- 4.3.17 On the abandonment of roundhouse (275) the doorway was deliberately blocked with wall (254) (**Plates 5 & 7**), and the roundhouse was overlain by natural in-filling layers (222/232).
- 4.3.18 To the east of (275) was a later roundhouse, (276), the construction of which blocked any access into (275). Only the northern part of the roundhouse was exposed within the excavated area (**Plate 8**). The roundhouse comprised wall (231/227) and internal floor surface (261). Collapsed wall (264) overlay the floor surface.
- 4.3.19 Located to the north of (276), and overlying (273), was a curving stone alignment (265), which was not investigated further.

Area 3 (Figure 6)

- 4.3.20 The remains of two inhumation burials, (303) and (306), were identified within Area 3. Grave (303), a small oval feature at the eastern end of Area 3, was lined with stones (300) (**Plates 10 & 11**). Within the cist were the skeletal remains of an infant (302). Following the interment of (302), the grave was revisited for the placing of a cremation burial (301), which appears to have been made directly over the head and upper body of the (302), with no other deposit separating the two deposits. It is possible that the cremation burial was made very soon after the inhumation burial, but it is also possible that there was some sort of covering over the latter (perhaps a corbelled roof to the cist similar to those postulated for (103) and (112)) which prevented the accumulation of overlying material. The infant remains (302) were radiocarbon dated to 1730-1520 BC, the Early Bronze Age (**Table 1**).
- 4.3.21 Grave (306) was cut into the natural sand (309) at the western end of Area 3 (**Plate 9**). The grave had been truncated almost to the base and may originally have been lined with stones forming a cist, but only a single fragment of gneiss stone survived at the south-west corner of the grave cut. Within (306) was a highly disturbed adult inhumation (305), which was flexed and lying on its right hand side. The grave backfill (304) had been cut through by a small feature (307) filled with a charcoal-rich deposit, and evidence of *in situ* burning is evident from the scorching of certain bones of (305). This could have occurred during the subsequent placing of a cremation burial similar to that in grave (303) (although no other evidence for this was observed), or from later disturbance and exposure to an adjacent camp fire.

Trench 4 (Figure 7)

- 4.3.22 This trench revealed the remains of the putative wheelhouse initially identified by Tebbutt, recorded as Group (427).
- 4.3.23 The earliest identifiable phase of construction comprised part of the northern perimeter wall of the structure, Group (414). This wall was composed of two curving dry-stone walls (inner wall (413) and outer wall (411)) with an internal core of compact sand (404). The continuation of the inner wall of the building (428) to the south was only partially revealed. The outer northern wall was recorded in a sondage as surviving to a height of at least 0.90m and was constructed on a stepped-out foundation. It was also clear that the building was a free-standing structure and not constructed within a pit dug into the machair. The original internal diameter was estimated as 12.1m, and the external diameter as 17.2m - a substantial structure.
- 4.3.24 The entrance to the building was east facing and defined by two upright blocks of worked gneiss forming door jambs (417) and (419) (**Plates 12, 13, 15**). The southern jamb (417) was bonded to wall (428), with the northern jamb (419) bonded to wall (413).
- 4.3.25 Two parallel east-west aligned walls, (416) and (418), extended inwards into the wheelhouse from the entrance (**Plates 12 & 13**). These are radiating piers within the building, creating compartments or separate living areas as well as possibly providing support for the roof structure. The walls were constructed

with opposing bar-holes built into them for the placing of a timber bar to prevent the door being opened - (429) in wall (416) and (430) in wall (418) (**Plates 12 & 13**).

- 4.3.26 A third radiating pier (415) was identified to the north of (418). This was not as substantial as the other piers and provides possible evidence of a rebuild, or perhaps the adaptation of an aisled house to a wheelhouse. However, the latter seems less likely given the evidence of the other two piers.
- 4.3.27 Immediately outside the entrance, and within the thickness of the north wall, was a curving structure forming an ante-chamber (420) (**Plate 14**). This appears to have been a later modification to the entrance arrangements. The structure appeared to tilt inwards slightly and may perhaps have been corbelled, or this may be evidence of the partial collapse of the structure.
- 4.3.28 A sondage excavated against outer wall (411) uncovered evidence of midden material banked up around the wheelhouse. A number of midden deposits were recorded in the sondage but were not further investigated.
- 4.3.29 No floor surfaces were identified within the interior of the wheelhouse, but excavation in this area was curtailed due to time constraints and the high water table. One layer (406) was identified on which lay a number of whale bones, possibly deliberately placed. It is unlikely, however, that this deposit was either a floor surface or an occupation layer as it was otherwise sterile. Whale bones have been recovered from a number of sites in the Outer Hebrides, where it appears they were used as structural elements within buildings; for example at Traigh Bostadh, Great Bernera on Lewis, where a whale vertebrae was used as a post socket for a door in one of the houses (S. Thompson pers. obs.).

5 FINDS

5.1 Introduction

- 5.1.1 Finds were recovered from all the excavated areas, although mostly from Area 2. Pottery, animal bone and marine shell were recovered in some quantity (although the animal bone total is skewed by the disarticulated remains of a single animal), and there was also a significant quantity of human remains, both burnt and unburnt. Datable artefacts (pottery) indicates a date range from Bronze Age to Iron Age.
- 5.1.2 All finds have been quantified by material type within each context, and totals by material type are given in **Table 2**.

5.2 Pottery

The Assemblage

- 5.2.1 A total of 194 sherds were recovered, weighing 2771g. Only a single sherd was recovered from a stratified context within Area 1, from the backfill of Grave (106). This feature was excavated by AOC as their Cist 4, the pottery from which was recorded as 'a small, undecorated vessel with a flat base and

a rim with an interior bevel' (MacSween 2006). The single sherd recovered in 2007 was a thin body sherd with three parallel lines of impressed twisted cord, apparently deriving from a coarse Beaker. Two unstratified plain sherds are in fabrics similar to those recovered from Areas 2 and 4, and probably date to the Early and Middle Iron Ages.

- 5.2.2 Pottery from Area 2 consisted of 160 sherds weighing 2504g, the bulk of which came from two contexts in roundhouses (275) and (276). Thirty-two sherds from floor (214) in roundhouse (275) came from a flattish, upright rim of a vessel in a micaceous sandy fabric which contains some shell, entirely typical of the ceramics of this period. Temper in this instance consisted of common angular rock fragments, many of which were extremely coarse, and which are probably gneiss (no identification has been attempted). Again, temper of this type is common in the Iron Age ceramics from the Site, most of which seem to represent fragments of coarse, flat-bottomed, entirely plain rather tub-shaped jars with simple rims. Although the ceramics are coarse (some coarse in the extreme) there is some indication of attention paid to external surfaces: some are wiped (or possibly even slip-coated) and on many (although by no means all) some care has been taken to prevent inclusions protruding through the surface. Most of the ceramics from house (275) came from layer (222) above the floor; one small sherd came from (232).
- 5.2.3 In house (276), six sherds came from floor (261), while a much larger quantity came from layer (228). These included 52 sherds representing some of the body and approximately 30% of the rounded, upright rim of a very coarse vessel with a diameter at the mouth of 200mm. Ceramics from roundhouses (275) and (276) are not distinguishable in terms of temper, fineness, or fabric, and are clearly broadly contemporary.
- 5.2.4 The remaining 80 sherds from Area 2 came from a series of sand deposits and possible cultivation layers (201, 217, 229, 255). Layer (255) contained 60 sherds and some small crumbs deriving from a plain vessel with a rounded, slightly in-turned rim 280mm in diameter. Approximately 40% of the rim survived. Although rock-tempered and with the same clay matrix as the rest of the assemblage, this vessel had better sorted, generally smaller inclusions and a slipped and smoothed surface.
- 5.2.5 Trench 4 contained a small assemblage of 30 sherds, weighing 239g. Sherds from this trench are notable for being tempered with finer rock fragments, and for having less shell and more quartz sand in the matrix. Also, there are indications of vessels with carinated or shouldered walls, and some sherds have decoration (including tooling, finger-impressed cordons, and incised horizontal and zig-zag lines). This part of the assemblage is of much more careful manufacture than the portion from Area 2, and is clearly later, probably of Middle or even Late Iron Age date. Six sherds came from topsoil contexts, one from the core of wall 427, and the remainder from midden deposits.
- 5.2.6 The only other sherd worthy of mention is a flattish, slightly flaring rim fragment in a typical rock-tempered, slightly micaceous shell sand fabric. Both the inner and outer surfaces are decorated with quite neat rows of

impressed ring-and-dot pattern. It is difficult to place this sherd accurately in the sequence, although its quality and form points to either a Beaker or Middle Iron Age type.

Discussion

- 5.2.7 In terms of the previous material recovered from Allasdale, there is a broad similarity between the assemblages from the Time Team and AOC excavations. The pottery recovered from AOC Cist 4 seems to have Food Vessel affinities, while the single sherd recovered from that feature during the Time Team excavations appears to be Beaker, suggesting a broad contemporaneity. The unstratified sherd with impressed ring-and-dot decoration finds general (although not especially close) parallels in sherds from Coll and Tiree (see Gibson 1982, 135, 367) and Tents Muir, Fife (Gibson 1982, 523).
- 5.2.8 The unstratified assemblage from the AOC works and the assemblages from Areas 2 and 4 are ostensibly similar, and lie within the spectrum of ceramics recovered from midden deposits elsewhere in the Western Isles. MacSween notes the similarities between the decorated element of the material seen by her and that from middens at – for instance – Dun Valan, South Uist (Parker Pearson and Sharples 1999). The linear decoration is typical of wheelhouse pottery (Campbell 1991) and the finger-impressed cordons from Area 4 have clear similarities with Late Iron Age ‘Broch Period’ ceramics, especially.
- 5.2.9 Although of extremely coarse appearance (many of the coarsest sherds appear to be little more than collections of angular rock fragments stuck together), the vessels from which they derive are considered ‘well suited to a cooking pot function’ (Campbell and Lane 1988, 208), and both external sooting and internal residues on some sherds add credence to this identification.

5.3 Stone

- 5.3.1 The stone includes three stone rubbers, one possible quern fragment, and a small fragment of slate, possibly worked. A small piece of granite found in the backfill of grave (306) is apparently unworked.

5.4 Human Bone

Introduction

- 5.4.1 This report summarises the results of detailed analysis of the human remains recovered from the Site; the full report, and the supporting archive data, are included in the project archive.
- 5.4.2 Human bone was recovered from 17 contexts, including the remains of four inhumation burials and three cremation-related deposits. Three of the four inhumation burials had been made in cist graves (graves (103), (112) and (303)). Two of the cremation-related deposits were also recovered from cist features/graves (127 and 303), one having been deposited over the remains of an earlier inhumation burial ((301), above (302) in grave (303)). The cremation-related deposit (203/260) was also made in association with placed

stones and ‘sealed’ by small rounded beach pebbles. Remains from two of the inhumation burials were subject to radiocarbon analysis and each produced an Early Bronze Age date (**Table 1**). Stratigraphic evidence and similarity in form of the mortuary deposits (including with the dated material excavated by AOC; Cook 2006), suggests all the deposits relate to the same period.

Methods

- 5.4.3 Osteological analysis of the cremated bone followed the writer's standard procedure (McKinley 1994a, 5-21; 2004a). The degree of erosion to the unburnt bone was recorded using the writer's system of grading (McKinley 2004b, fig. 7.1-7). Age (cremated and unburnt bone) was assessed from the stage of tooth and skeletal development (Beek 1983; Scheuer and Black 2000), and the patterns and degree of age-related changes to the bone (Buikstra and Ubelaker 1994). Sex was ascertained from the sexually dimorphic traits of the skeleton (Bass 1987; Buikstra and Ubelaker 1994). Measurements were taken of the unburnt bone (Brothwell and Zakrzewski 2004) and skeletal indices calculated where possible (Trotter and Gleser 1952, 1958; Bass 1987). Non-metric traits were recorded in accordance with Berry and Berry (1967) and Finnegan (1978).

Results

- 5.4.4 A summary of the results is presented in **Table 3**; details are held in the archive.

Taphonomy

- 5.4.5 The unburnt bone is generally in fairly good condition (grades 0-3) with some surface degradation and loss of trabecular bone, particularly with the immature individuals. Some of the redeposited bone is slightly bleached indicating its exposure to the elements, including fragments recovered from the previously excavated cist (106) (AOC Cist 4) and the few fragments from the second individual within grave (306) (**Table 3**).
- 5.4.6 Major factors affecting the quantity and quality of the unburnt bone were the surviving depth of the feature from which it derived and the level of disturbance. The natural sand around burial (302) had been scoured away by the wind leaving the original ‘fill’ of the cut largely upstanding (**Plates 10 & 11**); most of the fragments of the immature individual (302) buried within the grave which were not lying below the cremation-related deposit (301) had been lost, the latter acting as a stabilising medium in the recently shifting burial environment. Conversely, the cist grave (103) had survived to a depth of 0.43m and had suffered no evident disturbance, resulting in excellent bone preservation and *c.* 99% recovery of the skeletal remains. The total absence of the manubrium (upper part of the breast bone) from an otherwise almost complete skeleton suggests the possibility of the grave having been revisited post-decomposition for the strategic removal of some remains. The deepest surviving cist grave (112) (0.57m deep) had also been revisited, though whether by deliberate human agency or animal activity it is not clear; the disturbance to the burial remains themselves in this case could have been accidental.

- 5.4.7 Two graves, (303) and (306), each contained small quantities of unburnt bone fragments from a different individual to the main occupant of the grave. In the case of grave (303), a few skull fragments from a young infant were recovered from the deposit immediately above the remains of the inhumation burial; in view of the condition of this grave fill (see above) it cannot be stated with certainty that the second individual was not *in situ*, but it seems more likely that a limited number of skeletal elements were redeposited in the grave fill. Although grave (306) had survived to only a very shallow depth (0.10m) and had clearly suffered some (possibly recent) disturbance, the few bone fragments from a second adult recovered from the fill suggest redeposition of disarticulated remains.
- 5.4.8 The bone from two inhumation graves had been subject to dry-bone charring (brown/black) and staining; this was observed to fragments of skull from both immature individuals within grave (303) and to some vault, foot and pelvic bones of (305) from grave (306). The inhumation burial within grave (303) had been 'sealed' by a cremation-related deposit (301/2), including what appears to have comprised burnt/charred turf (see below, Palaeo-environmental assessment); had the latter deposit been made whilst sufficiently hot (*c.* 400-500 deg. C) it could have charred the unburnt (already dry) bone lying below it. The charring to the bone from (306) is rather more difficult to explain; there had clearly been some recent disturbance to the remains, possibly as a result of a beach barbeque, however, nothing distinguished the charred plant remains from this feature from those from elsewhere (see below, Palaeo-environmental assessment), suggesting the burning events may have been roughly contemporaneous.
- 5.4.9 The cremated bone is in good visual condition but there are few fragments of trabecular bone, the latter being prone to preferential destruction in aggressive burial environments.

Demographic data

- 5.4.10 A minimum of eight individuals are represented within the unburnt bone assemblage: five immature individuals (two *c.* 38-40 weeks foetal and three infants; 9-12 months, 1.5-2 years and 2.5-3 years) and three adults (minimum one female and one male). The two foetal individuals and the youngest of the infants are represented by disarticulated redeposited remains, as is the unsexed adult; the remaining four individuals were recovered from the *in situ* remains of burials.
- 5.4.11 The cremated human bone assemblage includes the remains of a minimum of two, possibly three individuals, including a 3-4 year old infant and an adult. The uncertainty with respect to the number of individuals is due to the inconclusive nature of the deposits, generally low level of bone recovery and the lack of duplicate skeletal elements between remains from (127) and (303). If the cremation-related deposits from one or both of these features represents other than the remains of a burial, the bone could have derived from the same cremation and represent parts of the same individual (see *discussion*).

- 5.4.12 The form and nature of the assemblage has close similarities with that recovered during the previous investigations of the Site in 2005 by AOC (MacSweeney 2006). A minimum of 13 individuals were recovered from the four cists investigated, again comprising a mix of *in situ* (five) and redeposited remains (eight), amongst which neonates apparently predominated (parts minimum seven; five adults including two females and three males; one subadult/adult).
- 5.4.13 Although without more detailed analysis the overall numbers recovered from the Site to date cannot be confidently estimated (some of the previously recovered disarticulated remains may relate to those individuals identified within the current investigations), they do include a minimum of 17 individuals, including seven foetal/neonatal, three infants and seven adults (four male and three female). The high proportion of immature remains (*c.* 59%), particularly neonates (*c.* 41%), is unusual within archaeological cemetery populations, though close to that which may be expected within a 'normal' population for this period (Brothwell 1971). The paucity in neonatal (<6 months of age) remains usually seen within archaeological cemetery populations is commonly interpreted as being indicative of the differential mortuary treatment of these young individuals, for which there is both clear and circumstantial evidence across the temporal range (Scott 1999). The evidence from Allansdale suggests that young immature individuals and adults were subject to similar mortuary treatment, although it is interesting to note that particular cists/graves contain only the remains of unburnt immature individuals and that their redeposited remains do not appear in the graves of adults. The absence of any juveniles or subadults (*c.* 5-18 yr.) from the assemblage is slightly curious and may be indicative of their disposal elsewhere, or within a particular part of the cemetery currently still sealed below the dunes (the recorded graves extended to the northern margins of the dune lying to the south of the area of investigation).
- 5.4.14 No cremated remains were recovered in the previous investigations (despite cist (127) apparently being equivalent to AOC Cist 2 from which unburnt bone was excavated). The location of these deposits in very close stratigraphic proximity to the inhumation burials suggests both mortuary rites were being undertaken within the same temporal range. There is no evidence to suggest the age or sex of the individual influenced their mode of deposition.

Skeletal indices

- 5.4.15 Some skeletal indices and stature estimates could be made for the three adults. The estimated stature for the male (1.62m) is slightly lower than those given for the remains excavated by AOC (1.65m and 1.66m) and that for the female (1.61m) slightly higher (1.51m). The unsexed skeleton was estimated at 1.66m. All the male heights are below or at the lower end of the range for contemporaneous data recorded elsewhere in Britain.

Pathology

- 5.4.16 Pathological lesions were observed in the remains of all the unburnt adults. Only one full adult dentition was recovered together with a few teeth from a second individual. Slight dental calculus (calcified plaque/tartar) was

observed on most teeth. Gross dental caries (resulting from destruction of the tooth by acids produced by oral bacteria) were seen in 2/34 teeth (maxillary molars). Dental abscesses were recorded in three sockets (3/32) all formed in association with the carious lesions; one abscess exiting buccal and another palatally. Slight dental hypoplasia (developmental defects in the tooth enamel formed in response to growth arrest in the immature individual; Hillson 1979) was observed in 8/34 tooth crowns; their location indicates the individual experienced periods of ill health or nutritional stress between *c.* 3-5 years of age (i.e. after weaning and before the full development of the body's own immune system). Further discussion of the potential dietary, health and status implications of the results is of limited value within such a small, piecemeal assemblage.

- 5.4.17 A small depression *c.* 8mm diameter and *c.* 1 mm deep in right side of the occipital vault from skeleton (111) may be a healed depressed fracture, sustained from an assault on the individual with a blunt implement. Well-healed but slightly misaligned fractures in the left tibia (distal) and fibula (proximal) shafts from (305) were probably sustained as the result of a strong rotational force (Adams 1987). There is slight disto-lateral displacement of the broken segments and shortening of the shafts by *c.* 5mm. Extensive exostoses (new bone) along the distal border of the fibula shaft indicates soft tissue damage, with bleeding into the muscle. Fractures to the tibia are often compound in nature (Adams 1987) and there are some indications (sinus) of infection within the bone though this was apparently not active at the time of death.
- 5.4.18 The inferior surface and much of the anterior body of the 5th lumbar vertebral from (111) has been destroyed by erosive lesions with little sclerosis and limited new bone formation (*c.* 8mm height loss anterior-posterior). The anterior surface of the adjacent 1st sacral vertebra was similarly affected with some slight fine-grained reactive new bone along the ventral surface of the body. The lesions are indicative of a chronic infection possibly linked to a specific pathogen, possible diagnoses including tuberculosis or brucellosis (Rogers and Waldron 1995, 89-94). Whatever the cause of the lesion its affects must have been both very painful and debilitating for the individual.
- 5.4.19 Most of the other lesions were indicative of some form of degenerative joint disease (**Table 3**). Degenerative joint disease was recorded in two cervical vertebrae (*c.* 2.9% adult vertebrae). Lesions indicative of osteoarthritis were recorded in *c.* 10% of spinal joints (thoracic and lumbar); non-spinal manifestations of the condition being limited to the costo-vertebral joints (*c.* 13%). Osteophytes (irregular growths of new bone along joint surface margins) and pitting in articular surfaces may developed in response to a number of different joint diseases and it is not always possible to ascertain the specific cause of individual lesions (Rogers and Waldron 1995, 25-26). Lone osteophytes often appear to be a 'normal accompaniment of age' (Rogers and Waldron 1995) and, other than possibly contributing to increased stiffness and decreased mobility in the joint, are unlikely to result in any significant pathological symptoms unless their extensive development impinges on a neighbouring nerve (most likely in the spine). Lone

osteophytes were recorded in a further 4% vertebral articular process joints (mostly thoracic) and a range of joints of the upper and lower limb (**Table 3**). Lone pitting was recorded in *c.* 8.8% spinal joints (possibly indicative of the early stages of osteoarthritis) and a variety of non-spinal joints including the metatarsal-phalangeal (*c.* 5.6%) and one of four temporo-mandibular joints.

- 5.4.20 The glenoid surface of the left scapula from skeleton (111) is noticeably shortened in length compared with the right, with a pronounced *c.* 5 degree dorsal angle to the whole of the surface. The contours of the left humerus head are slightly flatter than right with a reduction in the length to inferior margin. This slight malformation of the left shoulder joint seems most likely to have been a developmental defect, there being no indications of trauma. It is likely to have slightly impaired the function of the joint (less flexibility) and created a slight visible deformity in the living individual (shoulder slight displaced backwards, slightly lower than the right and possibly of weaker appearance) though unlikely to have caused them any great discomfort.

Pyre technology and cremation ritual

- 5.4.21 Although the majority of the bone is white in colour, indicative of full oxidation of the organic components, a few fragments from each deposit exhibit blue or black colouration indicative of incomplete oxidation (Holden *et al.* 1995a and b). The affected elements include skull vault, rib shaft, cervical vertebra and femur shaft; in each instance only part of the skeletal element is affected. A variety of intrinsic and extrinsic features may affect the efficiency of oxidation of the bone (McKinley 2000), and the small-scale discrete distribution of poor oxidation in these instances suggest a cut-off in oxygen supply possibly linked with parts of the bone being partially buried in the fuel ash, coupled with a reduction in temperature towards the end of the cremation process.
- 5.4.22 The weights of bone recovered from each of the deposits is small, with a maximum of 136.7g from (127); this represents only *c.* 8% of the expected weight of bone from an adult cremation (McKinley 1993). The lower weight of bone from the deposit containing infant remains is to be expected but still falls well short of the weight of bone which would have remained at the end of cremation. The deposits within both (127) and (303) are likely to have suffered some disturbance and loss of remains. The material from cut 303 was exposed to the elements and standing above the level of the surrounding surface, and it is highly likely that at least some of this cremation-related deposit has been lost. Cist (127) appears to be one of those excavated by AOC (Cist 2) but they gave no record of any burnt material within the fill. If this were to be the same cist, some of the remains could have been removed in the prior investigations. The quantity of bone is one of the factors for consideration in the interpretation of the deposit types (see below).
- 5.4.23 The maximum fragment size recorded was 53mm and the majority of the bone from the adult depositions (*c.* 68%) was recovered from the 10mm sieve fraction; the bone fragment size from the infant deposits was understandably slightly smaller (36mm maximum and majority – 69% from 5mm fraction). There are a number of factors which may affect the size of cremated bone fragments (McKinley 1994b) the majority of which are

exclusive of any deliberate human action other than that of cremation itself. There is no evidence here to suggest deliberate fragmentation of the bone prior to burial.

- 5.4.24 Elements from all four skeletal areas are represented within each deposit, with the commonly observed bias in favour of the easily identifiable skull fragments and against the less robust elements of the axial skeletal (mostly comprising trabecular bone). A few tooth roots and/or the small bones of the hands and feet (three) are represented within each deposit but the numbers are low (one-five elements). These elements are generally fairly common within burials of Bronze Age date and may be reflective of the collection procedure of remains from the pyre site for burial. In the cases represented here, their absence could also assist in understanding the formation processes and nature of the deposits (see below).

5.5 Animal Bone

Introduction

- 5.5.1 The animal bone assemblage amounts to 804 bones of mammals, birds and fish, mostly hand-recovered with some bone coming from soil samples. Conjoining fragments that were demonstrably from the same bone were counted as one bone in order to minimise distortion, and so totals may not correspond to those given in **Table 2**. The material dates to the Bronze Age/Iron Age with small quantities of later material.
- 5.5.2 Most bone fragments were in fair condition with quite a large proportion being in good condition; 40% of the bones were identifiable to species. At 6%, the number of loose teeth is normal and some re-working can be assumed. Gnawing marks probably made by dogs were seen on only four bones, and the level of scavenger destruction is thus probably low. Approximately 17% of the bones showed signs of contact with fire. This high number indicates cooking practices, the possible use of bone as fuel and/or the occasional burning of bone waste.

Animal husbandry

- 5.5.3 The material included horse (n=1), cattle (30%), sheep/goat (61%), pig (3%), dog (n=1), deer (n=2, both antler, one burnt), bird (n=2) and fish (n=2) (fish vertebrae and small mammal bones were also recovered from palaeoenvironmental samples from the wheelhouse midden deposits: see below). The bird species present were guillemot (*Uria algae*) and a large gull (*Laridae*). The fish remains were unidentifiable due to a lack of diagnostic features. Other animals encountered were rabbits, which were likely intrusive (different colour or preservation compared to the rest of the bone). Furthermore, the remains of sea mammals were also found. The complete ulna, probably of a seal, was found unstratified. Context (406) contained three pieces of whale rib of which one was worked.
- 5.5.4 In total, 65 bones could be aged to provide an insight into the population structure of the animals. The presence of foetal cattle bones in layers (217) and (228) and foetal sheep in (228) indicates local breeding. A total of 16 bones could be measured to provide an insight into phenotype.

Consumption and deposition

- 5.5.5 The presence of elements of all parts of the animal body makes it likely that the animals were butchered locally. Butchery marks were seen on 1% of the bones and were made with knives.
- 5.5.6 The assemblage contained one bone group in cut (244), sealed beneath the floor of roundhouse (275). The partial skeleton belonged to a sheep/goat aged between 36 and 42 months according to epiphysial fusion (Habermehl 1975) and between 21 and 54 months according to tooth wear (Jones 2006) and had been partly burned. The skeleton consists of both mandibles, skull fragments, most ribs, some vertebrae (one burnt, most butchered), both scapula, fragmented and burnt humeri, both radii (burnt), right ulna (burnt), both pelves (left burnt), both tali and right calcaneus. Some vertebrae, both femori, both tibiae and all feet were missing. Since the skeleton had been clearly butchered using knives, it is possible that the feet were removed and carried off after skinning and that the hind legs were removed and deposited elsewhere as well. Why the front legs were partly burned remains unanswered. Alternatively, since the remains were dumped into a pit and were clearly no longer in articulation, the remains might derive from more than one skeleton.

Worked bone

- 5.5.7 The assemblage contained eight pieces of worked bone. Seven of these are points, made from various species (including cattle, sheep/goat and bird) and bone elements (all long bones). These came from layers (110), (201), (228) and (255) (two examples), surface (261) and layer (408). Also present is a split part of a whale rib from which the rims have been rounded off to form a disc (surface (406)).
- 5.5.8 The high polish on the tips of some of the finer points suggests their use in textile working. In addition, the finished products and the cut marks on the base of a cattle horn core in layer (229) indicate bone and horn being worked near the Site.

5.6 Marine Shell

- 5.6.1 Several species are represented amongst the marine shell – limpet, periwinkle, razor shell and scallop. Most of the shell came from midden deposits (408) and (410) in trench 4.

5.7 Other Finds

- 5.7.1 Other finds comprise small quantities of undiagnostic fired clay and burnt peat ('cramp').

6 PALAEO-ENVIRONMENTAL ASSESSMENT

6.1 Introduction

- 6.1.1 A total of 18 samples were taken, fourteen of which were associated with Bronze Age cremation-related deposits. These included three from cist (127); one each from cist (210) and (307); five from cut (204) above stone setting (202); and four from cremation burial (301). The remaining four samples came from midden deposits (408, 410) outside the Late Iron Age wheelhouse and two from occupation layers associated with the Middle Iron Age roundhouses (214, 216).

6.2 Methods

- 6.2.1 Bulk samples were processed by standard flotation methods; the flot retained on a 0.5 mm mesh, residues fractionated into 5.6 mm, 2mm and 1mm fractions and dried. The coarse fractions (>5.6 mm) were sorted, weighed and discarded. Flots were scanned under a x10 – x40 stereo-binocular microscope and the presence of charred remains quantified (**Table 4**) in order to present data to record the preservation and nature of the charred plant and charcoal remains and assess their potential to address the project and subsidiary aims. Preliminary identifications of dominant or important taxa are noted below.

6.3 Charred plant remains

- 6.3.1 The only cereal remains came from the four deposits associated with the Iron Age structures. The roundhouse samples were by far the richest as far as cereal remains are concerned. Both layers (214) and (216) produced some five to ten grains of hulled barley (*Hordeum vulgare* *sl*) each, along with several charred monocot stems and remains of fruiting capsules of *Callunua* *sp.* Seeds of probable wild mustard (*Brassica* *sp.*) and *Persicaria* (*Persicaria maculosa/lapathifolia*) were also recovered from roundhouse (216), along with several large tubers each around 1cm in size. The samples also produced several fragments of charred conglomerated material, of which at least two from (214) may have been of sheep or goat dung.
- 6.3.2 The only other cereal remains came from the midden deposits associated with the wheelhouse (layers (410) and (408)); these included a rachis fragment of barley (*Hordeum vulgare* *sl*), along with one definite and a couple of probable grains of barley. The samples otherwise comprised mainly charred monocotyledon (grass, sedge, reed etc) roots and stems, along with roots of dicotyledons and conglomerated material similar to that seen in the other samples.
- 6.3.3 The four samples from cists (127), (210) and (307) contained little material other than occasional root and stem material, as well as fragments of conglomerated and parenchyma (soft plant tissue) material.

6.3.4 Of the four samples from cut (204), stone setting (202), all were dominated by conglomerated charred material and fragments of charred stems, along with fragments of burnt bone similar to that seen within the cist cremation burials described above; the samples also contained some seeds of sedge (*Carex* sp.) and possible remains of heather (*Ericaceae*).

6.3.5 The samples from cremation burial (301) contained relatively few remains, but there was a similar array of material to that seen in the other cremation related deposits.

6.4 Charcoal

6.4.1 Generally charcoal was poorly represented in the samples. Some of the samples from cist (127) and cremation-related deposit (301) in (303) had small quantities of charcoal along with burnt root fragments and conglomerated fragments.

6.4.2 Roundhouse layers (214) and (216) had generally more charcoal associated with them, in particular layer (214) contained a lot of charcoal including larger pieces of possible oak (*Quercus* sp.). This sample also included stems and root-type charcoal.

6.5 Molluscs and foraminifera

6.5.1 During the processing of bulk soil samples for the recovery of charred remains, shells of marine, brackish and terrestrial molluscan species were recovered from most of the samples. Within several of the samples shells of foraminifera were also recovered and identified as *Elphidium crispum*.

6.5.2 The samples from cist (127) contained a mixture of open country and shaded conditions. In the former were shells of *Vertigo* sp., *Pupilla muscorum* and *Vallonia* sp. while in the latter were shells of *Oxychilus* sp./*Aegopinella* sp.; while intermediate species included shells of *Cochlicopa* sp. Several shells of smaller marine species, mainly of the Rissoidea including probable *Rissoa parva* and *Onoba semicosta*, were recovered. Also noted were a few of the brackish species e.g. *Hydrobia* cf. *ulva*. The samples also contained some shells of foraminifera, probably *Elphidium crispum*.

6.5.3 The second cist burial (397) contained very few shells, but a similar array of material was represented to that in (127).

6.5.4 The midden sample from (410) had a few shells of shade-loving species, *Lauria cylindracea*, and *Aegopinella* sp. That from (408) had, in addition, shells of open country species *Vertigo* sp. and *Helicella itala*. It also had some shells of marine species including Rissoidea and slightly larger shells of rough and common flat periwinkle, *Littorina saxatilis*, and *Littorina obtusata* respectively.

6.5.5 The samples from roundhouses (214) and (216) yielded a similar mixture of mollusc shells, although generally little material was recovered. These included those of open country, *Pupilla muscorum*, *Vallonia* sp., *Vertigo* sp.;

shaded conditions, *Aegopinella* sp., *Acanthinula aculeata*, *Aegopinella/Oxychilus* sp.; and intermediate, *Cochlicopa* spp. Marine and brackish water species included those of the Rissoidea and *Hydrobia* cf. *ulva* respectively.

- 6.5.6 The stone setting (204) contained generally very few shells, with a few of *Onaba* cf. *semicostata* and *Rissoa* sp., and some foraminifera.
- 6.5.7 The possible cremation burial (259) and cremation burial (301) had a few shells, predominantly of open country terrestrial species, including *Pupilla muscorum*, *Vallonia* and *Vertigo* sp. There were also a few Rissoidae types including *Onaba* cf. *semicosta*.
- 6.5.8 The range of terrestrial species is in keeping with the general openness of the landscape, while those of shaded and intermediate habitats can be associated with the stone and rubble fills of the cists and other, larger structures. It might be noted though that at least *Lauria cylindracea* seems to have adapted to dune habitats (Thew 2003).
- 6.5.9 Not all the marine species recovered are necessarily contemporary with the archaeology recorded on the Site, being part of the general formation of the dunes and machairs within the area. It might be noted that all are common on Barra today. The relatively large shells of *Littorina* sp. recovered from the midden associated with the roundhouse are slightly more unusual and may have been brought in on seaweed (Thew 2003).

6.6 Fish and small mammal bones

- 6.6.1 Only the midden deposits (408) and (410) associated with the wheelhouse contained any fish bones or small animal bones (from (408)). Most of the fish bones were vertebrae, with about 10 to 12 recovered from (408) while (410) yielded only two.

6.7 Summary

- 6.7.1 There exists some question over the nature of the material associated with the cremation-related deposits, in particular that from (301), layer (260) above stone-setting (202) in cut (204), cist (127) and layer (301). The material from these deposits resembled burnt soil with charred stems and seeds of a small trigonous sedge (*Carex* sp.).
- 6.7.2 It might be noted that no clear evidence for peat burning has been found previously on Barra (Gilbertson *et al.* 1995, 15), and while the matrix seemed to comprise burnt stems and soil, it did not resemble the often pink to yellow-orange siliceous, ash-rich deposits that the burning of peat usually produces. Rather the deposits resembled burnt turves, comprising charred, fused, vitrified soil, especially in the amount of stems and roots present. The material may have derived from the lifting of the soil/turf material under the pyre, comprising a probable black, humic podsol. Alternatively, it should be noted that along with peat, turves are cut from grassland heath and moor and used for fuel on both Orkney and Shetland (Fenton 1978). It is interesting

that no other fuel remains survived in most of these deposits, with only the slightest hint of the presence of wood charcoal.

- 6.7.3 The cereal remains are in keeping with previous excavations on Barra of Iron Age features in which only hulled barley was recovered (Smith 2000), along with relatively few other seeds. Barley has also been the dominant cereal recovered from other Iron Age and Bronze Age sites within the Outer Hebrides (Jones 2003). Smith (2000) also noted the potential presence of charred dung of sheep/goat in the samples from Alt Chrisal.
- 6.7.4 The evidence for fuel is slight on the Site, with wood charcoal only recovered in any quantities from the roundhouses. The midden material had little charcoal, but did contain stems and roots. The cremation-related deposits seemed to have large amounts of roots, stems and burnt conglomerated material. Alternative fuel supplies in the absence of tree wood include the collection of heather and heathland shrubs along with possibly peat and turf. Jones (2003) notes the mixing of animal dung with turves, seaweed, and/or straw (cf. Fenton 1978) as potential alternative fuel resources in the Iron Age, and certainly this represents a potential source of material as seen in some of the samples here.

6.8 Recommendations

- 6.8.1 No further work is recommended for the charred plant remains and the mollusca. Identification of the wood charcoal might help to establish what species were used and/or imported to the Site. Such potential, however, is limited for the cremation-related deposits where larger fragments of identifiable material were relatively rare, but such potential does exist for the material from the roundhouses.

7 DISCUSSION

7.1 The Deflation Hollow

- 7.1.1 In the area of the sand dune blow-out (Areas 1, 2 and 3) a sequence of agricultural activity, occupation and burial was recorded, from perhaps as early as the Late Neolithic to the Early Iron Age.

Late Neolithic –Early Bronze Age

- 7.1.2 The earliest activity within the hollow comprised the cultivation deposit (110) and the ard marks which cut it. These have a *terminus ante quem* date of 1640-1490 BC (Cook 2006, 6), the radiocarbon date obtained from skeletal remains within AOC Cist 2 (later recorded as (127)) which cut the cultivation layer. It is, however, likely that ploughing ceased at the time of the first of the burials around 1880-1630 BC, the Early Bronze Age. This episode of ploughing could, therefore, be Late Neolithic.
- 7.1.3 Roundhouse (256) could be of similarly early date (Late Neolithic/Early Bronze Age), on the basis of being sealed by a deposit (273) that was cut by a series of cremation-related features similar to cremation deposit (301),

which overlay skeleton (302) within grave (303). Skeleton (302) was radiocarbon dated to 1730-1520 BC, the Early Bronze Age, and the grave was likely to have been revisited soon after for the placing of the cremation burial (301).

7.1.4 If roundhouse (256) is Late Neolithic this would be very important, as the Late Neolithic settlement archaeology of the Western Isles is conspicuous by its absence when compared to the sites associated with death and commemoration. The number of passage graves, tombs, cairns and ritual monuments are a clear indication of a sizeable population during the Neolithic (Branigan and Foster 2002, 44), which are likely to have lived within small scattered dwellings (Parker Pearson *et al.* 2004, 38).

7.1.5 It is possible that both the cultivation soil (110) and roundhouse (256) belong to the transition period between the Late Neolithic and Early Bronze Age and could, therefore, be contemporaneous with the 'substantial roundhouse (T19)' excavated at Alt Chrisal on the southern edge of Barra overlooking Vatersay.

The burials

7.1.6 Following abandonment of the roundhouse (256) and the end of the ploughing represented by (110), there appears to have been a period of multi-rite burial occurring with inhumation and cremation taking place. The burials provide evidence of the continuation of the rite of multiple burial, whole individuals, disarticulated remains and cremated remains being interred together. This is typical of the Neolithic. However, the radiocarbon date of the skeletal remains is Early Bronze Age, and the evidence of stone-lined graves for single individuals is a typically Bronze Age rite. It would appear, therefore, that Neolithic traditions continued in this area later than was originally assumed.

7.1.7 The AOC excavation identified four cist graves containing the remains of 13 individuals, represented by adult male and female, child and neo-natal bones. The current (Time Team) programme of work excavated a further four inhumation graves (as well as re-excavating two from the AOC excavation), with a minimum of eight individuals identified from the unburnt bone. There were also a number of cremation burials and evidence of cremated remains being placed within inhumation graves. The cremated human bone included the remains of two, possibly three individuals.

7.1.8 The radiocarbon dating of the burials from the AOC excavation comprised five samples of unburnt human bone dated to between 1880-1490 BC, giving an interment period of some 200 years, with evidence of multiple burials within single graves suggesting burial within a family group. This hypothesis by Cook (2006, 1 and 6) is supported by the results obtained from the current programme of works. The two samples of unburnt human bone recovered from the Time Team excavations are contemporary with those obtained by AOC, and date between 1880-1520 BC, and there is comparable evidence of multiple interments within single graves.

- 7.1.9 The cist graves were mostly formed of upright gneiss stones, with a number of horizontal stones which showed possible evidence of corbelling and domed coverings to the graves; this appears to have prevented the initial infilling of the graves with wind-blown sand and the coverings could have been dismantled for the placing of further remains. Other corbelled Bronze Age burial cists are known from the Western Isles, such as that identified during rescue excavations in the Rosinish machair on Benbecula. (Crawford 1976-77)
- 7.1.10 The nature of this Site created some difficulties with interpretation resulting from the exposure and subsequent disturbance, by both human and natural agencies, of some of the mortuary deposits.
- 7.1.11 Fragments of redeposited foetal/neonatal bone were recovered during surface cleaning across Area 1, but the source remains unknown. It is highly likely that further *in situ* deposits or disturbed, redeposited bone fragments lay close to the surface, undetected in the current investigations but easily exposed by the scouring wind, and that some such remains have already been removed or subject to animal or human disturbance. The redeposited adult bone from cist (106) (AOC Cist 4) corresponds precisely with remains recovered from the surface (or protruding from the sand) recorded by two visitors to the island in 2006 and subsequently reburied by them in a small pit dug at 'the edge of the nearby cist' (Smith and Smith 2006; figures 6, 8, 10 and 11). It is possible that the other *in situ* bone they observed was that within grave (306). Unlike others within the area, this grave had no stone surround and there was no sign of its presence on the surface, its discovery being accidental via exposure of the bone by slight scuffing of the sand in passing. It is still uncertain if the parts of the skeleton from this shallow grave, found redeposited within an equally shallow pit at one end of it, reflect ancient disturbance and redeposition or the reburial of bone accidentally disturbed in a recent event in a similar fashion to that described above.
- 7.1.12 Redeposited bone, possibly from previous occupants of the same grave or from those buried elsewhere, was also recovered from most of the inhumation graves excavated both in the current investigations and those undertaken by AOC (see above). The inclusion of such material in the grave fills could have been incidental or deliberate, though the frequency with which this occurred suggests the latter is most likely. The deposition of the cremated remains and pyre debris above the remains of inhumation burial (302) in grave (303) certainly cannot have been accidental. The use of cist graves for multiple multi-rite deposits in the Early Bronze Age is relatively common in Scotland, as is the inclusion of redeposited remains (e.g. McAdam 1982). Similar characteristics are evident within graves of the same date from elsewhere in Britain and suggest a form of extension of the Late Neolithic rite of 'communal' burial (Lynch 1970, 117-8; Savory 1972; Petersen 1972; Mount 1995; McKinley forthcoming). There is also some evidence to suggest that graves were revisited and some bones removed; a process for which there is growing evidence for the period (e.g. McKinley forthcoming).

- 7.1.13 The cremation-related deposits presented particular difficulties for interpretation, since an unknown quantity of material is likely to have been lost from at least two of them (in features (127) and (303)). The quantities of bone recovery are very low, well below the average from cremation burials from this period (McKinley 1997).
- 7.1.14 The pyre debris recovered in association with each deposit is curious. The environmental analysis of the material and its structure suggests much of it represents charred turf burnt under reducing conditions. In each case the most structured of this material appeared to ‘cap’ the rest of the deposit, and suggests the possibility that the burnt turf from below pyres may have been lifted and used to ‘seal’ the deposits of cremated material. The black colouration of the rest of the burnt material is not consistent with the colour of peat ash produced in experimental pyres using peat as the main fuel (producing a very fine, dense powder, pale greyish-pink in colour; J. McKinley *pers. obs.*); yet no fragments of charred wood were recovered from the samples.
- 7.1.15 Most of the small amount of bone from the eroded deposit within (303) was concentrated within one half of the area; similarly, in cist (127), *c.* 77% of the bone came from the northern half of the deposit. This discrete distribution of the cremated bone suggests these deposits may have been burials, with pyre debris included in the backfill. The very low quantity of bone recovered in each case may be due to deposits from one cremation being made within several of the cists. If fragments of unburnt bone were being ‘curated’ and redeposited in the fills of several cist graves, the cremated remains may have been treated in a similar way, but in their case - the transformation processes from corpse to bone occurring during cremation - the distribution need not await the decomposition of the corpse.
- 7.1.16 Feature (204) shares many characteristic with other features excavated from below cairns on Barra and referred to as ‘platforms’. These features comprise a circular/subcircular area of placed stones forming a flat ‘platform’ (VS7; Merrony 2000, figures 5.6-7, 195-196) or slightly raised cairn (VS4B; Branigan and Foster 2002, figure 21, plate 18, 62-63), on which sit deposits of cremated bone and black fuel ash with common inclusions of beach pebbles. There is no indication of *in situ* burning, the cremation having been undertaken elsewhere and some of the remains collected for deposition on the prepared area. Although the weight of bone recovered is not stated in either of the above cases the description suggests the amount was relatively small (small as defined above; Rega *et al.* 2000). Context (260) partly lay on what could be described as a small ‘platform’ of flat stones (202), the deposit being sealed by a thin layer of beach pebbles (203). Most of the bone was again concentrated in one part of the deposit (south-west), suggesting it may represent the remains of a burial covered by pyre debris. There were some indications of burning to some of the stones which raises the possibility of burning *in situ*. The quantity of bone and fuel ash is, however, too small to support this argument, unless much of the material was removed for deposition elsewhere prior to the deposit being ‘sealed’. The stones may have been reused or relocated from an earlier site of burning?

Early Iron Age

- 7.1.17 Within the deflation hollow the Early Iron Age is marked by the construction of a new structure (roundhouse (275)), but it is unclear as to whether the cist graves would have been visible when the building was constructed, as no clear relationship between the graves and the building was identified.
- 7.1.18 The earliest of the roundhouses was Group (275). The building had an internal diameter of *c.* 5.3m and had been heavily eroded on the western side. The layers within the centre of the building were composed of numerous levelling deposits, floor layers and repairs, but it was the burial of a sheep/goat beneath these layers which provided the date for the roundhouse. This burial was radiocarbon dated to 750-400 BC, the Early Iron Age. Evidence from elsewhere in the Hebrides suggests that burials beneath the floors of roundhouses took place just prior to their construction, so roundhouse (275) can be dated as Early Iron Age with some confidence.
- 7.1.19 The second roundhouse (276) was larger than (275), with a diameter of *c.* 6.8m, and was clearly constructed after (275) as it blocked the entrance to the latter. The building technique appears identical to (275) and (276) is likely to have replaced (275) relatively shortly after its abandonment.

7.2 The Wheelhouse

- 7.2.1 The building in Trench 4 (Group (427)) can be described as a wheelhouse in the traditional sense: *'a circular stone-built house, its interior divided into segments by radiating piers'* (Branigan 2007, 73), but with later adaptations. Although no dating evidence was recovered from the structure, material recovered in the 1960s from the midden surrounding the building was described as *'broch type pottery'* (Videotext Communications 2007, 3), potentially Middle Iron Age in date (*c.* 200 BC-AD 400).
- 7.2.2 A Middle Iron Age date for this wheelhouse would fit with the evidence from other such sites. Excavated examples on Barra such as at Alt Chrisal (a wheelhouse modified from an aisled house) and the aisled house at Tigh Talamhanta (Branigan and Foster 2002, 79-81) date to this period, and examples on South Uist such as Cille Pheadair and Cill Donnain were built around AD 200. Branigan (Branigan and Foster 2000, 337) uses the term wheelhouse to *'include circular houses with radial piers, whether the piers are free-standing or joined to the circuit wall'* as *'without excavation it is impossible to distinguish between the two. Further, as the excavation at T17 (Alt Chrisal) confirmed a house may be built with free-standing piers that are later extended to meet the circuit wall'*.
- 7.2.3 When the building (427) was initially constructed it was free-standing, as shown by the midden material banked up against the northern wall. This was the structural tradition for wheelhouses on Barra and the surrounding islands, rather than being sunk into a pit excavated into the machair, utilising the surrounding sand dunes as support, as was typical for the Uists, Lewis and Harris (Branigan and Foster 2002, 82).

- 7.2.4 Building (427) was a substantial structure, with an estimated outer diameter of 17.2m and an internal diameter of 12.1m, covering an area of over 100m². It is in its large size that this structure differs from all other wheelhouses excavated and identified on Barra. At Alt Chrisal the aisled house, later altered to a wheelhouse, had an internal diameter of c.6.3m and an external diameter of 9.6m (Branigan and Foster 2000, 151-152). At Tigh Talamhanta the overall diameter of the aisled house was 11m (Branigan and Foster 2000, 337). The SEARCH project identified 15 possible wheelhouse sites, most of which appear as mounds measuring between 12m and 25m wide, and therefore perhaps on excavation proving to be much smaller.
- 7.2.5 The size of building (427) is more comparable to the broch towers of Barra, especially the smaller structures such as Dun Loch nic Ruiadhe (15m x 14m), Dun Caolis (16m by 14m) and Dun Ban, which has a diameter of 18m (Branigan and Foster 2000, 339). However, there is insufficient evidence to identify this structure as a broch, and the internal structure of the building indicates either a wheelhouse in the traditional sense or one with free-standing piers which has been subsequently altered.
- 7.2.6 Two wheelhouses which are closer in size to (427) have been identified on North Uist. An aisled house (converted to a wheelhouse) at Sollas and the aisled house at Cletraval both have an external diameter of close to 15m. At Cletraval the surrounding perimeter wall was 2.2m wide, considerably thicker than most wheelhouse walls and comparable to (427). Pottery dating to the 5th and 6th centuries AD was recovered from Cletraval, indicating occupation in the Late Iron Age/early Pictish period (Armit 1998; Armit 2003, 136; <http://lmid1.rcahms.gov.uk>).
- 7.2.7 Immediately to the east, and on the north side of the wheelhouse entrance is an ante-chamber, representing an addition to the main structure. This feature is possibly evidence of alteration to the building during the Late Iron Age, or perhaps the early Pictish period. Although only a small area of building (427) was exposed (and it is not known whether there was an opposing ante-chamber on the south side of the entrance), the presence of an ante-chamber or small guard cell on the side of the building is similar to arrangement in the Pictish 'jelly baby' houses excavated at Traigh Bostadh, Great Bernera on Lewis (Neighbour and Burgess 1996; Thompson 1997) and Buckquoy, Birsay, on Orkney (Ritchie 1976-77). Further similarities can be seen in the construction of the houses at Bostadh - the perimeter walls were built of dry-stone walls with a compact sand core. No evidence, however, of radial piers were observed at either Bostadh or Buckquoy.

7.3 A Viking Burial Mound?

- 7.3.1 The large mound situated to the north-east of the main excavation area was in local tradition believed to be a Viking burial mound or ship burial. Investigation into the mound using GPR and augering failed to identify any anthropogenic aspects to its construction and it is therefore likely to be a natural sand dune. The work around the mound did, however, identify the ancient ground surface by comparing the GPR results with the information gained from the augering.

8 RECOMMENDATIONS

- 8.1.1 The investigations at Allasdale Dunes clearly augment those of the SEARCH project, and the results should be incorporated in any continuing or future programme of research on the island. The results of the current project, however, do warrant a separate publication, not least in order to present the radiocarbon dates obtained for the burials and for the roundhouse construction, and to discuss the funerary evidence which is of at least regional significance.
- 8.1.2 A short article, probably between 4000 and 5000 words with three or four supporting illustrations, based on the results and discussion presented in this report, in the *Proceedings of the Society of Antiquaries of Scotland* is suggested as an adequate level of publication. This would comprise a brief introduction detailing the circumstances of the project and its aims and objectives; a results section detailing the structural and burial remains recorded, with finds information integrated into the text as appropriate; and a brief discussion of the results, with reference to the original aims and objectives.
- 8.1.3 A separate paper on the results of the investigation of the ‘Viking burial mound’, in conjunction with predictive surface modelling, will be prepared by Dr Henry Chapman of Birmingham University and Dr John Gater of GSB Prospection Ltd.

9 ARCHIVE

- 9.1.1 The excavated material and archive, including plans, photographs and written records, are currently held at the Wessex Archaeology offices under the project code 65305 and site code ADB07. The paper archive will be submitted to the National Monuments Record for Scotland. The artefacts are subject to Scottish Treasure Trove law, and will be reported to the Scottish Archaeological Finds Allocation Panel. It is hoped that the Panel will make the finds available to the Museum Nan Eilean, Stornoway, Isle of Lewis, for eventual exhibition in Barra.

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Table 1: Radiocarbon results

<i>Sub-group/ Feature no.</i>	<i>Feature type</i>	<i>Context</i>	<i>Depth/ Height OD if known</i>	<i>Material to be dated, identification</i>	<i>Comments on context, relationship of the material to the event, justification, questions</i>	<i>Result no.</i>	<i>CI3 %</i>	<i>Result BP</i>	<i>Fraction details, incl. C weight (mg) if known,</i>	<i>Cal date BC (1 sigma, 94.5% unless stated</i>	<i>Phase</i>
Cut 103	Cist grave	111	c.0.43m	Human bone	Part of inhumation, no artefactual dating evidence, need confirmation of assumed date (on basis of nearby phased cist burials in the Hebrides)	NZA 28252	-19.4	3421±30	Bone protein	1880-1630 BC	Early Bronze Age
Cut 303	Cist grave	302	Surface (scour)	Human bone	Ditto	NZA 28254	-19.5	3342±30	Bone protein	1730-1520 BC	Early Bronze Age
244	Pit	262	-	Animal bone: sheep	To give minimum age for floor of ?IA hut which seals pit with deliberate deposit of disarticulated sheep remains	NZA 28253	-20.6	2432±30	Bone protein	750-400 BC	Early Iron Age

Table 2: Finds totals by material type and by trench (number / weight in grammes)

Material	Area 1	Area 2	Area 3	Tr 4	unstrat.	Total
Animal Bone	29/221	1024/2061	4/33	106/3767	1/29	1164/6111
Fired Clay	-	17/994	-	-	-	17/994
Human Bone	67/215	3/40	128/132	-	-	198/387
Pottery	3/15	160/2504	-	30/239	1/13	194/2771
Shell	10/30	51/176	2/2	96/393	-	159/601
Slag	20/126	8/142	-	-	-	28/268
Stone	1/1	6/4316	1/3	1/1282	-	9/5602
Worked Bone	1/1	5/19	-	1/1	-	7/21

Table 3: Summary of results from analysis of human bone

context	cut	deposit type	quantification	age/sex	pathology
<i>Unburnt Bone</i>					
101	-	redep.	c. 5% l. c. 5% l. 1 bone u.	a) 38-40 weeks foetal/neonate b) 38-40 weeks foetal/neonate c) adult >18 yr.	
108	106	redep.	c. 6% u.l. c. 4 % s.l.	a) adult c. 20-45 yr. b) c. 40 weeks foetus/neonate	a) oa – T; pnb – tibia shaft; enth – patella; op - patella
109	106	redep.	<1% a.	adult >18 yr.	
110	-	redep.	c. 5% l.	38-40 weeks foetal/neonate	
111	103	inh. burial	c. 99%	adult c. 40-50 yr. female	calculus; caries; abscesses; hypoplasia; oa – costo-vertebral, T11-12, L1-5; ?healed depressed fracture - occipital; infection – L5-S1 bodies; pnb – S1; ddd – C5-6; ?developmental defect – left scapula; pitting – T6-7 ap, r. temporo-mandibular; op – l. shoulder, l. distal humerus, r. knee joint, r. ankle joint, l. MtT & prox. IP joint; enth – calcaneum; mv – S1 lumbarised, ?13 ribs
114 inc. 115 & 117	112	inh. burial	c. 82%	infant c. 1.5-2 yr.	
222		redep.	1 frag. a.	adult >18 yr.	
301	303	?redep.	c. 2% s.	infant c. 9-12 mth.	
302	303	inh. burial	c. 28% s.a.u.	infant c. 2.5-3 yr.	
305	306	inh. burial	c. 56% <1% s.l.	a) adult c. 30-40 yr. male b) adult >18 yr.	a) oa – T9-10; fracture – left distal tibia, left prox. fibula; ?healed o.myelitis; exostoses – left fibula; pitting – 4T ap, costo-vertebral, r. prox. IP (foot); op – costo-vertebral, l. hip, MtC-P, MtT-P, prox. IP (foot); enth – patella
<i>Cremated Bone</i>					
124 inc. 125	127	crd	136.7g	adult c. 19-40 yr.	
203 & 260	204	crd	33.3g	infant c. 3-4 yr.	
212	211	?	0.4g	?human	
301 & 302	303	crd	31.0g	adult c. 18-35 yr.	

KEY: s. –skull, a. – axial skeleton, u. – upper limb, l. – lower limb (skeletal areas recovered where all are not represented); oa – osteoarthritis; pnb - periosteal new bone; op – osteophytes; enth – enthesophytes; ddd - degenerative disc disease; mv - morphological variation; C – cervical; T – thoracic; L – lumbar; S – scapula; MtC/T – metacarpal/tarsal; IP – inter-phalangeal; ap - articular process

Table 4: Assessment of the charred plant remains and charcoal

											Residue
Feature type/no	Context	Sample	size litres	flot ml	size	Grain	Chaff	seeds charred	Charcoal 4/2 mm	Other	Charcoal >5.6mm
Cist Cremations											
cist cremation 127	124	2	16	10	²	-	-	-	0/2ml	moll-t (A) moll-b/m (B)	-
	125	9	8	35	²	-	-	-	-	moll-	-
	124	10	1	15	¹⁰	-	-	-	0.2/0.1ml	moll-t (C) moll- b/m (C)	-
cist 210	212	4	2	7	²	-	-	-	2/1ml	moll-t (B) moll-b/m (B)	-
cist 307	310	12	4	8	¹⁰	-	-	-	-	moll-t (C) moll- b/m (C)	-
Stone setting 204											
stone setting 204	203/ 260	16	10	175	⁵	-	-	C	-	-	-
	260	21	1	40	²	-	-	B	-	moll-t (C)	
	260	22	1	40	³	-	-	-	-	-	-
	260	23	2	60	⁵	-	-	C	-	moll-b/m (C)	-
NW Quad	259	24	1	3	¹⁰	-	-	-	-	moll-t (C)	-
Cremation burial? 301											
Quad A	301	31	0.3	0.5	²	-	-	-	-	moll-t (C)	-
Quad B	301	29	0.75	0.5	²	-	-	-	-	moll-t (C) moll- b/m (C)	
Quad C	301	30	0.75	0.5	¹	-	-	-	-	moll-t (C) moll- b/m (C)	-
Quad D	301	32	0.5	1.5	²	-	-	C	-	moll-t (C)	-
Round Houses											
layer 214	214	6	8	60	²	B	-	-	10/5ml	moll-t (B) Moll-b/m (C)	-
roundhouse	216	7	3			B	-	C	2/15ml	moll-t (B) moll- b/m (C)	-
Wheeled House											
midden?	410	13	4	50	⁵⁰	C	-	-	-	moll-t (C) moll- b/m (C) fish-(C)	-
midden	408	14	6	40	³⁰	C	C	-	-	moll-t (C) moll- b/m (C) smb-(C) fish- (B)	-

KEY: A** = exceptional, A* = 30+ items, A = ≥10 items, B = 9 - 5 items, C = < 5 items,
smb = small mammal bones; Moll-t = terrestrial molluscs Moll-b/m = brackish and amrine species;
NOTE: ¹flot is total, but flot in superscript = % of rooty material.

APPENDIX 1: Area and context descriptions

AREA 1			
Context	Description		depth (bgl)
101	<i>Wind-blown Sand</i>	Light whitish-yellow shell sand containing common small fragments (<0.10m), sub rounded and sub angular Lewisian gneiss stones and occasional larger (<0.40m) stones. This is a mixed deposit of wind-blown material derived from the exposed faces of the blown out sand dune, with stones either derived from the archaeological features exposed or arrived as a result of deflation from the later levels of the blown out dune with material blown from out from the archaeological deposits. Deposit overlies the newly exposed archaeology.	0-0.05m
102	<i>Natural</i>	Light yellow-whitish shell sand, which is physically cut by cist graves (103), (106) and (112), potentially stratigraphically earlier than cultivation soil (110), this deposit overlies natural gneiss bedrock in places (where exposed).	-
103	<i>Grave</i>	Cut for a cist grave, ovoid in shape with steep, near vertical edges and a flat base, measuring 1.73m long by 1.42m wide and a maximum of 0.43m deep. Cut contains stone cist lining, (104), skeleton (111), and backfill deposits (116) and (105) It is possible the top of the grave was sealed by some organic covering, potentially peat turves. Orientated NNW – SSE.	0.43m deep
104	<i>Structure</i>	Series of upright stones forming the lining of cist grave (103), most are upright though some are horizontal, which may indicate a possible corbelled roof to the cist. Stones measure 0.38m by 0.20m by 0.43m	0.43m high
105	<i>Fill</i>	Mid yellow-brown shell sand, upper backfill of grave (103), later filling of grave following partial earlier infilling, possibly following the removal of an organic covering.	0.22m thick
106	<i>Grave</i>	Cut for cist grave, recorded as 1.70m long by 1.10m wide and 0.32m deep. Originally excavated by AOC in 2005 and recorded as Cist 4; re-examined during current programme of work. Skeletal remains were identified within the grave backfill, probably reburied there following the 2005 excavation. Contains stone setting (107), skeletal remains (108) and backfill (109). Aligned NNE - SSW.	0.32m deep
107	<i>Structure</i>	Stone setting for cist grave; subangular large gneiss stones, some set vertically, stones measure 0.70m by 0.35m by 0.25m. One stone had been displaced and fallen into the centre of the grave; this was not removed by AOC, but when removed skeletal remains (108) identified.	0.32m high
108	<i>Skeletal remains</i>	Disarticulated human remains within (106). Adult femur, vertebrae and scapula, neonate long bone and ear bone. As the grave was fully excavated in 2005 this material is likely to have been reburied sometime after that date, when numerous fragments of skeletal material were identified within the hollow.	-
109	<i>Fill</i>	Light whitish-yellow shell sand, wind-blown backfill of previously excavated grave, this could not be distinguished from original backfill material which sealed (108).	0.32m thick
110	<i>Layer</i>	Light yellowish-brown shell sand, darker than natural sand infers an organic content within it. Irregular shaped layer located over small mound within centre of Area 1. This is the base of a cultivation soil which has been cut (stratigraphically) by a series of ard marks (118), (120) and (122) and by the cut (127) of cist grave containing cremation material (124) and (125). Deposit not excavated. This layer is potentially contemporary with the (256), the earliest structure identified in Area 2.	-
111	<i>Skeletal remains</i>	Remains of a flexed inhumation burial, body tightly flexed, almost crouched, on right side, hands together in front of face, body slumped back slightly mandible maintained position, but rest of the skull has slumped round to the north - probably sat on some form of pillow and movement occurred after decomposition.	-

112	<i>Grave</i>	Cut of cist grave, ovoid in shape with vertical sides and a flat base, recorded as 1m long by 0.85m wide and 0.57m deep. Cut not exposed, but assumed cist stone lining flush with cut.	0.57m deep
113	<i>Structure</i>	Stone setting of gneiss blocks; stones recorded as approximately 0.35m by 0.25m by 0.40, arranged in an oval ring, with a number of horizontal stones which may imply the cist may have had a corbelled roof to the cist. Maximum height of the cist is 0.62m.	0.62m
114	<i>Skeletal remains</i>	Flexed inhumation burial laying on right sides, with hands under left femur, with feet tucked under pelvis, hands and feet mixed.	-
115	<i>Fill</i>	Light whitish-yellow mottled with brown patches, shell sand, fairly mixed deposit seen to slump towards the centre of grave (112). Upper backfill of grave.	0.21m thick
116	<i>Fill</i>	Very light brownish-yellow shelly sand, lower of two backfill deposits within cist (103), initial silting around the body, while it was covered with some kind of organic cover.	0.12m thick
117	<i>Fill</i>	Light yellowish-brown shelly sand, lower fill of cist (112) which overlies the skeleton (114).	0.20 thick
118	<i>Group</i>	Group number for series of ard marks cutting through the base of cultivation soil (110). Five parallel NNE-SSW aligned linear cut marks, on average 3.25m long by 0.25m deep and filled with (119). One of a series of three groups of ard marks; these appear to be later than the other two. More defined, but establishing stratigraphical relationships with the earlier two groups of ard marks difficult. Agricultural activity predating cist cemetery. Unexcavated.	-
119	<i>Group</i>	Group fill for ard mark group (118), light yellow shelly sand, no doubt dragged up from the natural by the action of the ard. Unexcavated.	-
120	<i>Group</i>	Group number for series of ard marks cutting through base of cultivation soil (110). Two parallel NW-SE aligned linear cut marks, on average 0.35m long by 0.15m deep and filled with (121). Stratigraphical relationship with other ard marks not proved.	-
121	<i>Group</i>	Group fill for ard mark group (120), light yellow shelly sand, no doubt dragged up from the natural by the action of the ard. Unexcavated.	-
122	<i>Group</i>	Group number for series of ard marks cutting through base of cultivation soil (110). Two parallel N-S aligned linear cut marks, on average 2.00m long by 0.22m deep and filled with (123). Stratigraphical relationship with other ard marks not proved.	
123	<i>Group</i>	Group fill for ard mark group (122), light yellow shelly sand, no doubt dragged up from the natural by the action of the ard. Unexcavated.	
124	<i>Deposit</i>	Dark brown sand deposit, upper of two fills within cist grave (127), possible cremation/pyre debris, which overlies (125) within cut (127) and butts stone lining (126).	0.10m thick
125	<i>Deposit</i>	Dark blackish-brown sand, sealed by (124) and overlies (126), lower deposit of cremation/pyre debris.	0.05m thick
126	<i>Structure</i>	Stone lining of cist grave (127). Large sub angular Lewisian gneiss stones creating lining of oval shape cist. A number of stones on the western side have been disturbed.	-
127	<i>Grave</i>	Cut of oval cist grave, filled with stone lining (126) and cremation deposits (124) and (125). 0.95m long by 0.60m wide 0.20m deep. Grave investigated during 2005 AOC excavation and recorded as Cist 2.	0.20m deep
128	<i>Grave</i>	Unexcavated cist grave. Previously excavated by AOC and recorded as Cist 3.	-
129	<i>Structure</i>	Large Lewisian gneiss stones forming stone lining of cist grave (128). Unexcavated.	-

AREA 2			
Context	Description		depth (bgl)
201	<i>Wind-blown Sand</i>	Light whitish-yellow shelly sand containing common small fragments (<0.10m), subrounded and subangular Lewisian gneiss stones and occasional larger (<0.40m) stones. Mixed deposit of wind-blown material derived from exposed faces of blown-out sand dune. Stones derived either from archaeological features exposed or arrived as a result of deflation from the later archaeological levels of the dune. Overlies newly exposed archaeology.	0.05m thick
202	<i>Structure</i>	Stone lining of cist grave (204), formed of unworked Lewisian gneiss stones, subangular and subrounded in shape. Positioned centrally within the stones is deposit (203), possible pyre or cremation debris.	0.10m high
203	<i>Deposit</i>	Very dark grey/black silty sand, with abundant small sub-rounded water-worn pebbles; overlies (259) and (260). Small stone sealing deposit.	0.05m thick
204	Cut	Cut for the placing of stone setting (202) which contains possible pyre/cremation material. Oval in shape with vertical sides and flat base. 1.10m long by 1m wide.	0.10m deep
205	Cut	Cut of unexcavated possible pyre/cremation site, recorded as 1.10m long by 0.80m wide, and irregular in shape. Very similar in appearance to (204) with the upper surface of pyre material covered with small stones. Cuts (273).	-
206	<i>Structure</i>	Stone lining of pyre/cremation site. Unexcavated.	-
207	<i>Deposit</i>	Unexcavated fill of (205), very dark grey-black silty sand, with abundant sub-rounded pebbles overlying burnt deposit. Stratigraphically later than (206). Deposit appears to butt up against possible roundhouse structure (256).	-
208	<i>Deposit</i>	Very dark grey/brown/black silty sand, with occasional small, water-worn pebbles. Deposit which appears to sit directly upon layer (273), but unclear if within cut as unexcavated. Appears to be dump of pyre debris or hearth waste. Unclear.	-
209	<i>Structure</i>	NW-SE aligned series of Lewisian gneiss stones forming a straight alignment of stones, possibly a wall, Unexcavated, but appears to sit upon (273), and may be related to the series of pyres/ hearths to the north. Identified as Stone Setting [024] during the AOC programme of work.	-
210	Cut	Cut for possible cremation burial. Sub circular in shape and roughly 0.60m in diameter, lined with stones (211) and filled with pyre/cremation debris (212). Cut into (273).	-
211	<i>Structure</i>	Stone lining of probable cist for the placement of cremated remains, series of un worked Lewisian gneiss stones creating cist.	-
212	<i>Deposit</i>	Very dark grey-black silty sand, possible cremation deposit within small cist (211).	-
213	<i>Deposit</i>	Irregular spread of very dark grey-black silty sand material; appears to sit directly upon (273), no clear cut identified. Unclear if just a dump of hearth material or if an uncisted cremation burial. Unexcavated.	-
214	<i>Surface</i>	Upper identified floor surface within round house Group (275), mixed mid to dark grey-brown with reddish patches of silty sand with considerable charcoal, evidence of peat burning within the structure. Deposit identified as a probable rammed peat floor which overlay earlier floor (215) and was sealed by (222).	
215	<i>Layer</i>	Mottled mid and light yellow and black silty sand, common charcoal fragments. Deposit below floor surface (214). Only partially revealed in section and a small sondage. Possible earlier floor surface or occupation layer. Overlies (216).	
216	<i>Layer</i>	Very dark grey-black silt sand, charcoal-rich, deposit below (215). Possible earlier peat and sand floor surface. Overlies (234).	
217	<i>Layer</i>	Unexcavated layer of mid brown silty sand located in the north-east corner of Area 2, appears to be a possible cultivation layer very similar to layer (110) in Area 1. Layer overlay (255) but was not investigated further.	

218	<i>Layer</i>	Irregular shaped spread of mid brown sand with occasional charcoal flecks. Deposit overlies pyre/hearth debris (219) and is sealed by (255). Very similar to possible cultivation layer (217), natural sand with slight organic component, or beginnings of topsoil formation.	
219	<i>Layer</i>	Very dark grey-black silty sand deposit with charcoal flecks; deposit revealed in plan in stone structure (220), within cut (274). Feature unexcavated, unable to ascertain if cremation/pyre debris or simple hearth.	-
220	<i>Structure</i>	Irregular/sub-circular disturbed stone structure. Recorded as 1.10m long by 0.60m wide and constructed of unworked Lewisian gneiss stones. Possible cremation cist or pyre site, or perhaps just a hearth, but the proximity to other cist burials suggests it is also one. Unexcavated.	-
221	<i>VOID</i>	VOID	VOID
222	<i>Layer</i>	Mid brown silty sand, probable natural infilling deposit. Overlies floor surface (214) and possibly contemporary with deposit (232). Unclear if layer deposited soon after the abandonment of the roundhouse (275), while (276) was occupied or if occurred much later. Deposit seals blocking wall (254).	0.08m thick
223	<i>Structure</i>	Northern curving wall of roundhouse Group (275), forming the north-eastern corner of the roundhouse. The southern end of (223) joins the western end of wall (225). Contemporary with wall (224), (the wall forming south-eastern corner). Recorded as three rough courses of unworked Lewisian gneiss stones, approximately 4m long and 0.25m wide with a minimum height of 0.15m and max height of 0.45m. Full height not identified. Wall likely to be stratigraphically earlier than floor layers (214), (216) etc, but not proved by excavation.	0.45m high max.
224	<i>Structure</i>	Southern curving wall of roundhouse Group (275), forming south-eastern corner of the roundhouse; northern end of (224) joins the western end of wall (225). Recorded as single course of rough, un-worked Lewisian gneiss stones, approximately 1m long by 0.41m wide.	0.20m high
225	<i>Structure</i>	Northern of two parallel E-W aligned stone walls forming the entrance way into roundhouse Group (275). Forms possible porch with wall (226). (225) joins the southern end of wall (223) at its western end, and was recorded as 1.90m long by 0.32m wide and a minimum height of 0.10m high and maximum of 0.20m. Two rough courses of unworked Lewisian gneiss.	0.20m high max
226	<i>Structure</i>	Southern of two parallel E-W aligned stone walls forming the entrance way into the roundhouse Group (275). Forms possible way with wall (225). (226) joins northern end of wall (224) at its western end; recorded as 1.85m long by 0.48m wide. Two rough courses of unworked Lewisian gneiss.	0.20m high max
227	<i>Structure</i>	Northern wall forming the north-west corner of roundhouse Group (276). (227) identical to (231), the continuation of the wall to the south. Recorded as 5.50m long by 0.42m wide; two courses of Lewisian gneiss.	0.30m high max
228	<i>Layer</i>	Mid yellow-brown silty sand, large-scale deposit which stratigraphically overlies wall collapse (264). Infilling of roundhouse (276) following abandonment of the structure.	0.10m thick
229	<i>Layer</i>	Light yellow shelly sand. Wind-blown sand deposit which seals (228) and is overlain by (201), natural backfilling event, which has been partially eroded following the latest machair blow-out.	0.15m thick
230	<i>VOID</i>	VOID	VOID
231	<i>VOID</i>	VOID	VOID
232	<i>Layer</i>	Mixed and mottled dark and mid brown shell sand deposit located between walls (225) and (226), part of roundhouse Group (275). Nature of deposit is unclear, possibly the latest of a series of floors or occupation deposits within the porch, or perhaps infilling following the abandonment of the building, similar to (222). Stratigraphically above (253).	0.08m thick
233	<i>Surface</i>	Very dark grey-black silty sand. Peat floor surface within roundhouse Group (275), stratigraphically overlain by (234) and seals (236). Only revealed in section.	0.02m thick

234	<i>Layer</i>	Light yellow sand deposit. Dump of natural sand within roundhouse (275), possible levelling/repair to floor as stratigraphically sealed by floor (216) and overlies floor (233). Only revealed in section.	0.05m thick
235	<i>Layer</i>	Dark grey-brown sand deposit. Nature of deposit not fully understood, quite a thick deposit and so could be levelling or repair to floor levels. Stratigraphically overlies (237) and physically overlies floor layer (238) and is sealed by (236). Only revealed in section.	0.16m thick
236	<i>Layer</i>	Mid yellow-brown fine sand deposit, function and nature unknown, possible floor repair/levelling. Only revealed in section.	0.07m thick
237	<i>Layer</i>	Mottled orange-grey silty sand, probable peat ash deposit which stratigraphically overlies floor layer (238), possible dump of material on floor surface. Only revealed in section.	0.02m thick
238	<i>Surface</i>	Very dark grey-black silty sand, lowest/earliest recorded probable rammed peat floor surface within roundhouse Group (275). Sealed by (237) and overlies (242) and (239).	0.04m thick
239	<i>Fill</i>	Mid yellow-brown sand, fill of pit (241), overlies (240) within pit. Nature of deposit unclear. Only revealed in section.	0.02m thick
240	<i>Fill</i>	Mottled mid-light grey-brown sand, fill of (241), appears to be naturally derived sand deposit. Only revealed in section.	0.10m + thick
241	<i>Cut</i>	Cut of probable feature, recorded as 1m wide and 0.10m + deep (not fully excavated). Feature located below a series of floor surfaces within roundhouse (275). Nature of feature unclear and unable to identify if feature holds some significance regarding the roundhouse construction or simply predates it. Only revealed in section.	0.10m+ deep
242	<i>Layer</i>	Mid yellow-brown fine shell sand, reworked natural deposit, sealed beneath surface (238). Large scale dump deposit, possible levelling for roundhouse floors.	0.14m thick
243	<i>Fill</i>	Light yellow grey fine sand deposit, deliberate backfill deposit sealing disarticulated sheep/goat burial (262) within cut (244).	0.20m thick
244	<i>Cut</i>	Cut of deliberate disarticulated sheep/goat inhumation, located beneath the floor layers within roundhouse Group (275), towards the north-eastern corner of the roundhouse. 0.36m long by 0.28m wide. Cuts through (278) fill of earlier feature (277).	0.20m deep
245	<i>Layer</i>	Mixed tipping lines of light yellow and dark grey sand within cut (247), series of thin deliberate isolated deposits recorded as a single fill. Cut by (277).	0.13m thick
246	<i>Layer</i>	Light yellow sand, lowest recorded fill of (247), Only revealed in section.	0.06m thick
247	<i>Cut</i>	Cut of feature below floors of roundhouse Group (275). Nature of feature unknown, but cut through by later feature (277), which was in turn cut by (244). 0.30m wide. Only revealed in section.	0.19m deep
248	<i>Layer</i>	Mid yellow-brown fine sand, reworked natural sand, probably as a result of movement across it and churning it up. Stratigraphically overlies the natural sand, and is cut through by (247). Only revealed in section.	0.14m thick
249	<i>Layer</i>	Light yellow fine sand, reworked natural sand, probably as a result of movement across it and churning it up. Probably identical to (248).	0.13m thick
250	<i>VOID</i>	VOID	VOID
251	<i>Fill</i>	Mid to dark grey-brown silty sand fill of small feature (252), secondary deposit, appears to be deliberate fill.	0.14m thick
252	<i>Cut</i>	Cut of small feature, which cuts through the natural and is filled with (251) and sealed by (242). Function of feature unknown. Only revealed in section.	0.14m deep
253	<i>Surface</i>	Mottled mid to light yellow sand with dark black patches of silty sand, common charcoal; probable floor/occupation surface between walls (225) and (226) forming the porch/entrance way into roundhouse. Deposit unexcavated, but was sealed beneath deposit (232) and potentially identical to (215).	-

254	<i>Structure</i>	North-south aligned blocking wall, recorded as a single course of unworked Lewisian gneiss stones, 1.40m long by 0.32m wide. Located at the junction of roundhouse wall (223) and porch wall (225), and roundhouse wall (224) and porch wall (226), blocking entrance into structure - evidence of decommissioning of structure. Wall (254) overlies the latest floor surface (214) within the roundhouse and is sealed by (222).	0.20m high
255	<i>Layer</i>	Mid to light brown silty sand. Large scale sand deposit, organic components suggest human activity or perhaps the beginnings of topsoil, machair formation during a period of stasis or perhaps abandonment on the site. Deposit very similar to (273) on which the pyres are situated, however this deposit overlies pyre deposit (207) and structure (256).	0.10m thick
256	<i>Structure</i>	Curving wall recorded as 2.40m long by 0.45m wide, single course of unworked Lewisian gneiss stones. Potentially forming the southern wall of a roundhouse, with collapse of the wall to the north recorded as (279). Possibly an Early Bronze Age structure as predates pyre deposits. Structure possibly contemporary with cultivation deposit (110) in Area 1.	0.20m high
257	<i>Cut</i>	Cut of small oval feature recorded as 0.40m long by 0.20m wide which cuts (255) and is filled with (258). Function unknown, possible working hollow.	0.10m deep
258	<i>Fill</i>	Mid brown silty sand, single fill of (257), deposit appears to be re-worked natural.	0.10m thick
259	<i>Fill</i>	Very dark grey black silty sand fill of (204). Possible pyre debris, within stone setting (202), sealed by (203). Northern half of deposit.	0.05m thick
260	<i>Fill</i>	Very dark grey black silty sand, fill of (204), possible pyre debris, within stone setting (202). Equal to (259) but from southern half.	0.05m thick
261	<i>Surface</i>	Mid-dark grey brown silty sand charcoal rich deposit. Floor surface within roundhouse Group (276), revealed beneath deposit (228). Stratigraphically sealed by possible wall collapse (264). Not excavated.	-
262	<i>Animal remains</i>	Deliberately placed disarticulated animal burial, probably either sheep or goat, within cut (244).	-
263	<i>Layer</i>	Mixed brown and light yellow sand deposit beneath (253/215), only revealed in small sondage. Possibly represents an earlier floor surface.	-
264	<i>Layer</i>	Probable wall collapse deposit derived from wall (227) of roundhouse Group (276), 1.40m long and 0.60m wide.	-
265	<i>Structure</i>	Slightly curved series of stones, which overlies deposit (273), possibly part of roundhouse structure. This structure was not investigated.	-
266	<i>Cut</i>	Cut of small cub-circular feature which cuts (255) and is recorded as 0.32m long by 0.30m wide. Similar to (257) possible working hollow.	0.08m deep
267	<i>Fill</i>	Mid brown silty sand fill of (266), appears to be re-worked natural and possibly deliberately deposited.	0.08m thick
268	<i>Layer</i>	Very dark grey/brown/black silty sand charcoal rich deposit which lies directly upon (255) and does not appear to be in a cut. Deposit not excavated and is possibly a dump of burnt material.	-
269	<i>Cut</i>	Possible construction cut for structure (256), but there is a void between (256) and the edge of the cut filled with (270).	-
270	<i>Fill</i>	Light-mid yellow sand fill of (269), between the edge of the cut and structure (256).	-
271	<i>Layer</i>	Dark grey/brown/black silty sand layer revealed in sondage excavated through (273), and possibly cut by (269). Possible earlier burning deposit, but not fully understood.	-
272	<i>Layer</i>	Dark grey/brown/black silty sand, charcoal-rich deposit which overlies (273) within structure (256) and is overlain by collapses deposit (279).	-
273	<i>Layer</i>	Mid brown sand layer. Re-worked natural with organic component. Has a number of pyre structures set into it and partly butts structure (256).	-
274	<i>Cut</i>	Cut of irregular shaped feature filled with stone setting (220) and possible pyre debris (219). Recorded as 1.10m long and 0.40m wide.	-

275	<i>Group</i>	Group number for structures and components of roundhouse. Appears to be the earlier of two identified Iron Age buildings. Composed of walls (223), (224), (225), (226) and floors and deposits (214), (215), (216), (234), (233), (236), (235), (237), (238) and (242).	-
276	<i>Group</i>	Group number for the second of two Iron Age roundhouses. Composed of wall (227), (231) and (261).	-
277	<i>Cut</i>	Cut of small feature revealed in section beneath the floor layers of roundhouse Group (275). Cuts (245) and is filled with (278). Recorded as 0.50m wide.	0.33m deep
278	<i>Fill</i>	Mid brown sand fill of (277), natural derived deposit with feature below floor surfaces.	0.33m thick
279	<i>Layer</i>	Layer of collapsed rubble derived from wall (256) and sealed by (255).	0.10 m thick
280	<i>Layer</i>	Collapse of floor layers from within roundhouse Group (275), located to the west of the section through the floor layers. Not excavated.	-
281	<i>Layer</i>	Rubble collapse to the west of the section through roundhouse Group (275) material derived from the walls of the structure.	-
282	<i>Natural</i>	Underlying natural basal geology, light yellow shell sand overlying natural bedrock of Lewisian gneiss.	-

AREA 3			
Context	Description		depth (bgl)
300	<i>Structure</i>	Series of small Lewisian gneiss stones forming the setting of a small cist, with cut (303). Recorded as 0.55m long by 0.51m wide.	0.10m high
301	<i>Layer</i>	Dark grey-black sandy silt; well mixed deposit of black fuel ash (?peat) with small fragments of immature cremated bone spread throughout, edges very crumbly and deposit stands proud of the surrounding area which has had the natural sand blown away. Cremation deposit overlying (nd deliberately placed over) inhumation skeletal remains (302).	0.05m thick
302	<i>Skeletal remains</i>	Inhumation burial within stone cist (300) within cut (303) Infant c.2.5-3 years.	
303	<i>Grave</i>	Cut of SE-NW aligned grave, ovoid in plan, edges of feature lost, but were probably vertical, flat base, 0.60m long by 0.55m wide. Initially dug and lined with stones (300) for the inhumation of remains (302) but revisited for the placing of cremation burial (301).	0.10m deep
304	<i>Fill</i>	Light yellowish brown shell sand. Deliberate backfill deposit around skeleton (305) within grave cut (306), disturbed by shallow cut (307).	0.10m thick
305	<i>Skeletal remains</i>	Flexed, lying on right hand side, with left arm on top, right arm underneath, cervical vertebrae articulated, thoracic vertebrae dropped back indicating additional disturbance, skull, left side of pelvis and left leg all missing. Disturbed adult inhumation burial.	-
306	<i>Grave</i>	Cut of grave, square in shape, and almost truncated to base, 1.05m long by 1m wide. Single sub-angular stone remains on the SW side of the cut, possibly representing the remains of a cist. The grave is clearly disturbed, nd the likelihood of it having been a cist is quite high.	0.10m deep max
307	<i>Cut</i>	Cut of very shallow irregular shaped pit, highly truncated. Cuts through fill of (306). Nature of feature unclear, though it clearly cuts (304); evidence of burning within the fill has scorched remains of skeleton (305). This suggests that the grave was already truncated and that this feature is more recent, perhaps a modern camp fire. Or it may be evidence of inhumation grave revisited for placing of cremation burial, similar to grave (303).	0.08m deep max
308	<i>Fill</i>	Dark brown mottled yellow sand. Upper fill of (307). Charcoal rich indicating in situ burning, probably a recent camp fire deposit.	0.05m thick
309	<i>Natural</i>	Light whitish-yellow shell sand. Natural basal geology which overlies Lewisian gneiss bedrock.	-
310	<i>Fill</i>	Lower fill of (307) dark blackish brown sand, evidence of burning, probably a recent camp fire.	0.03m thick max

311	<i>Wind-blown sand</i>	Light whitish-yellow shell sand containing common small fragments (<0.10m), sub rounded and sub angular Lewisian gneiss stones and occasional larger (<0.40m) stones. Mixed deposit of wind-blown material derived from exposed faces of blown-out sand dune, with stones derived either from archaeological features exposed or arrived as a result of deflation from later archaeological levels of the dune. Overlies newly exposed archaeology.	0.05m thick
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TRENCH 4			
Context	Description		depth (bgl)
401	<i>Topsoil and wind-blown sand</i>	Light whitish-yellow and dark brown shell sand containing common small fragments (<0.10m), sub rounded and sub angular Lewisian gneiss stones and occasional larger (<0.40m) stones. This is a mixed deposit of wind-blown material and topsoil formation below the marram grass. Deposit overlies the archaeology.	0-0.10m
402	<i>Layer</i>	Light yellow sterile sand, first spit of naturally derived material. Deposit of wind-blown sand which is infilling the centre of wheel house Group (427). Deposit arrived following abandonment and collapse of the building.	0.30m thick
403	<i>Layer</i>	Light yellow white sterile sand with lens of mid brown sand. Second spit of infilling within the centre of wheel house Group (427). Overlies deposit (406). Deposit arrived following abandonment and collapse of the building.	0.35m thick
404	<i>Fill</i>	Light yellow silty shell sand, with mid to dark brown patches. Wall core infilling between outer face (411) and inner face (413) of wall Group (414).	-
405	<i>Fill</i>	Light yellow shell sand, natural infilling of bar hole in wall (418).	0.20m thick
406	<i>Surface</i>	Light whitish-grey sand fill within centre of wheel house Group (427). A number of whale bones (SF 6) were located on this deposit, implying that it was a probable surface, although unlikely to be an occupation layer. Unexcavated	-
407	<i>Layer</i>	Light whitish-yellow sterile shell sand. Large scale wind-blown sand located to the north of the wheel house. Deposit arrived following abandonment and collapse of the wheel house Group (427). Overlain by (401) and overlies midden deposit (408).	0.34m thick
408	<i>Layer</i>	Mid brown silty sand with moderate inclusions of charcoal, and limpet and winkle shells, midden deposit which butts against the outside of wall (414). Overlies (409) and is sealed by (407).	0.08m thick
409	<i>Layer</i>	Light yellow sterile sand, wind-blown deposit which overlies midden deposit (410), and is sealed by (408).	0.05m thick
410	<i>Layer</i>	Dark brown silty sand with pink lenses of silty clay, with common fragments of razor shell, winkles and limpets with patches of pink probable peat ash. Midden deposit sealed beneath (409) and overlying (421).	0.08m thick
411	<i>Structure</i>	Outer curving dry stone wall of wall Group (414). Structure recorded as 2m long by 0.55m wide. Formed of six courses of roughly worked Lewisian gneiss resting on a wider foundation. Foundation recorded as 0.06m wider than wall. Associated with inner wall (413) and inner sand core (404).	1m high
412	<i>VOID</i>	VOID	VOID
413	<i>Structure</i>	Inner curving dry stone wall of wall Group (414). 3.80m long and 0.80m wide. Four courses of roughly worked Lewisian gneiss stones measuring <0.80m x 0.30m x 0.30m. Inner face of thick outer wall of the wheel house Group (427). Associated with outer wall (411) and inner sand core (404)	0.87m high
414	<i>Group</i>	Group number for the northern outer perimeter wall of the wheel house Group (427). Wall constructed of two curving dry-stone walls (411) and (413), with inner core of compact sand (404). No construction cut for the wall was identified, though it clearly had a foundation wider than the wall, as identified in the sondage excavated outside the building. This sondage also revealed that the wall was free standing, and had midden deposits banked up against it.	1m high

415	<i>Structure</i>	Lewisian gneiss stone built wall, roughly NE-SW aligned, 1.08m long by 0.35m wide and built of three rough courses. Appears to be a radial pier forming one of the spokes of the wheel house. The structure is not as substantial as the other surviving walls.	0.50m high
416	<i>Structure</i>	East –west aligned stone wall, 2.2m long by 0.47m wide, and built of five courses of worked Lewisian gneiss stones. Wall located within building and butts (417), southern door jamb of the entrance way. This is a radial pier of the wheel house. The construction appears to be in a single phase and not the filling of the gap between the pier and the perimeter wall. When associated with (418) forms an entrance way into the building. (416) has bar-hole (429) incorporated into it.	0.90m high
417	<i>Structure</i>	Worked Lewisian gneiss stone structure forming southern door jamb of entrance way into wheel house Group (427). 0.80m long by 0.80m wide, four courses. Associated with door jamb (419), the structure forms an entrance through the outer perimeter wall Group (414).	0.90m high
418	<i>Structure</i>	East – west aligned Lewisian gneiss stone wall, 1.9m long by 0.50m wide and three courses. Wall butts inner perimeter wall (413) of Group (414) and northern door jamb (419). This is a radial pier; when associated with (416) forms entrance way into the building. (418) has bar-hole (430) incorporated into it.	0.75m high
419	<i>Structure</i>	Worked Lewisian gneiss stone structure forming northern door jamb of entrance way into wheel house Group (427). 0.80m long by 0.77m wide and four courses. Associated with door jamb (417), the structure forms an entrance through the outer perimeter wall Group (414).	0.75m high
420	<i>Structure</i>	Curving wall located on the eastern side of the wheel house Group (427) directly opposite the entrance. Roughly 2.50m long and 0.60m wide and five courses of unworked Lewisian gneiss measuring roughly 0.60m x 0.30m x 0.30m. The structure appears to tilt inwards slightly, unclear whether evidence of corbelling or of partial collapse following abandonment. (420) forms an ante-chamber leading into the main entrance into the wheel house, a later addition to the wheel house structure.	0.90m high
421	<i>Layer</i>	Mid grey sand deposit outside of wall (411), and contains occasional shell and charcoal fragments, probably midden deposit. Sealed by (410) and seals (422).	0.10m thick
422	<i>Layer</i>	Brown sand deposit with charcoal flecks and various shells, midden deposit. Sealed by (421) and seals (423).	0.04m thick
423	<i>Layer</i>	Light yellow coarse sand deposit, natural sand with some midden material incorporated into it. Located at water table and so partly recorded in section and partly in core sample. Sealed by (422) and potentially butts the foundation stone of wall (411).	0.20m thick
424	<i>Layer</i>	Grey-brown silty sand loam deposit with charcoal and peat ash inclusions, located at the same level as the foundation stone of the wall (414), midden deposit, layer revealed in core sample.	0.03m thick
425	<i>Layer</i>	Light yellow coarse sand deposit revealed in core. Possible re-worked natural geology.	0.26m thick
426	<i>Natural</i>	Very light yellow shell sand, wind-blown natural deposit.	0.20m + thick
427	<i>Group</i>	Group number for wheel house building. Building composed of outer double skinned wall Group (414) (inner wall (413), core (404) and outer wall (411)), radial piers (415), (416) and (418), door jambs (417) and (419) and the addition of an ante-chamber at the entrance (420).	-
428	<i>Structure</i>	Only partially revealed in plan, the southern inner curving wall of wheelhouse Group (427), associated with (416) and (417).	-
429	<i>Structure</i>	Small recess into wall (416), 0.15m wide by 0.10m high, for placing of bar to block entrance into (427). Associated with bar-hole (430) in (418).	0.20m deep
430	<i>Structure</i>	Small recess into wall (418), 0.12m wide by 0.10m high, for placing of bar to block the door way into (427). Associated with bar-hole (429) in (416).	0.20m deep



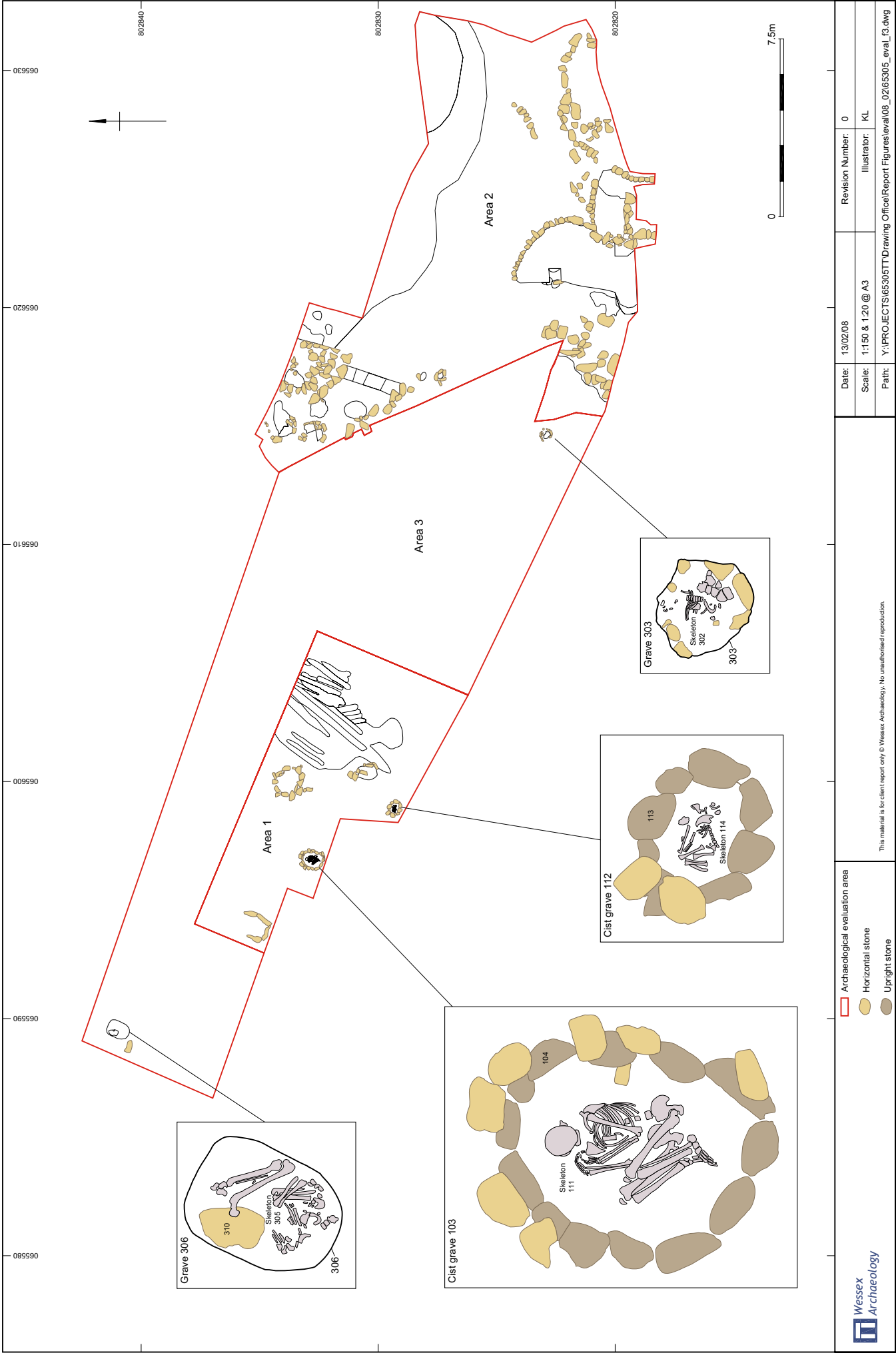
Site location plan

Figure 1



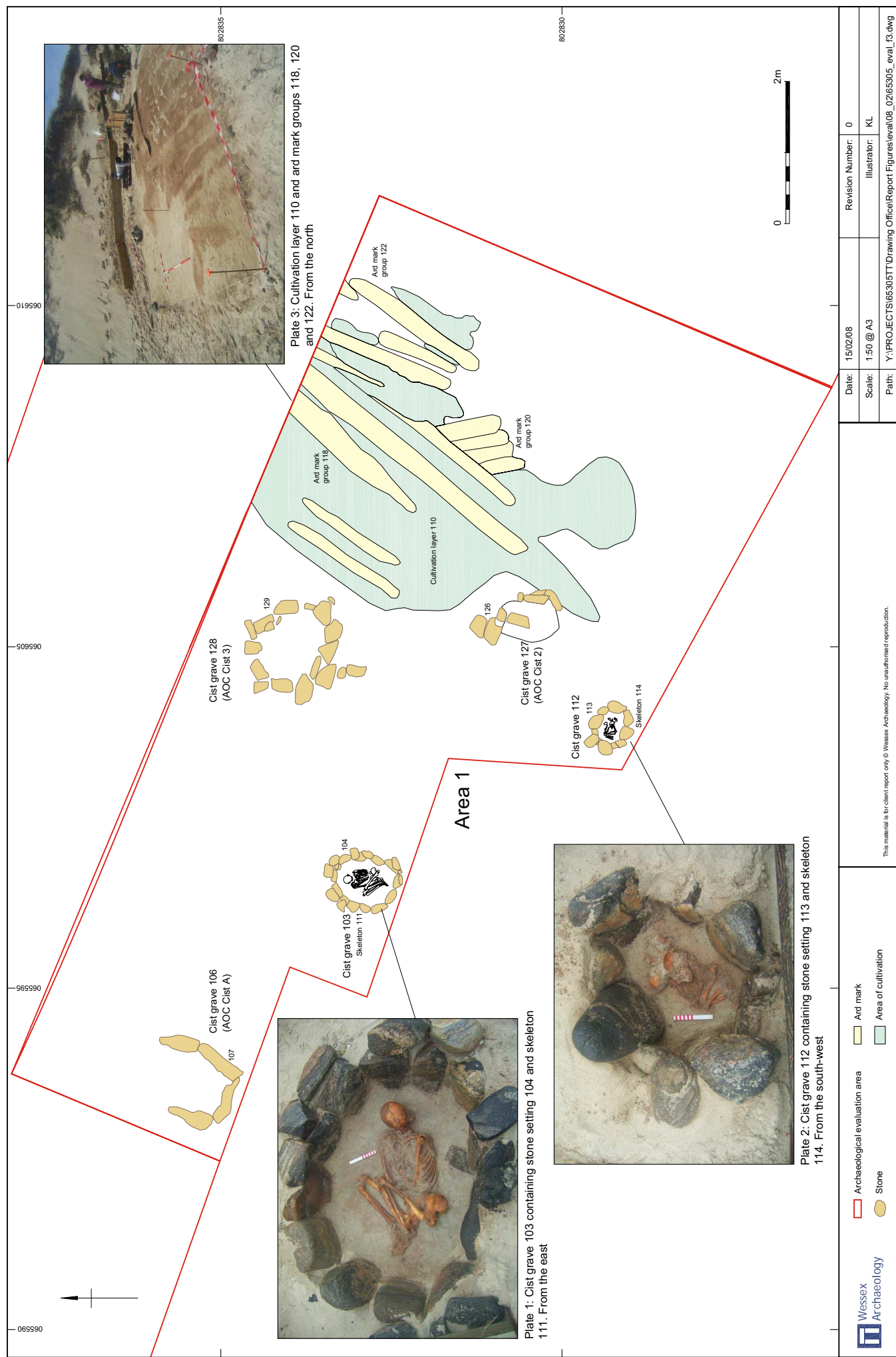
Geophysical survey results

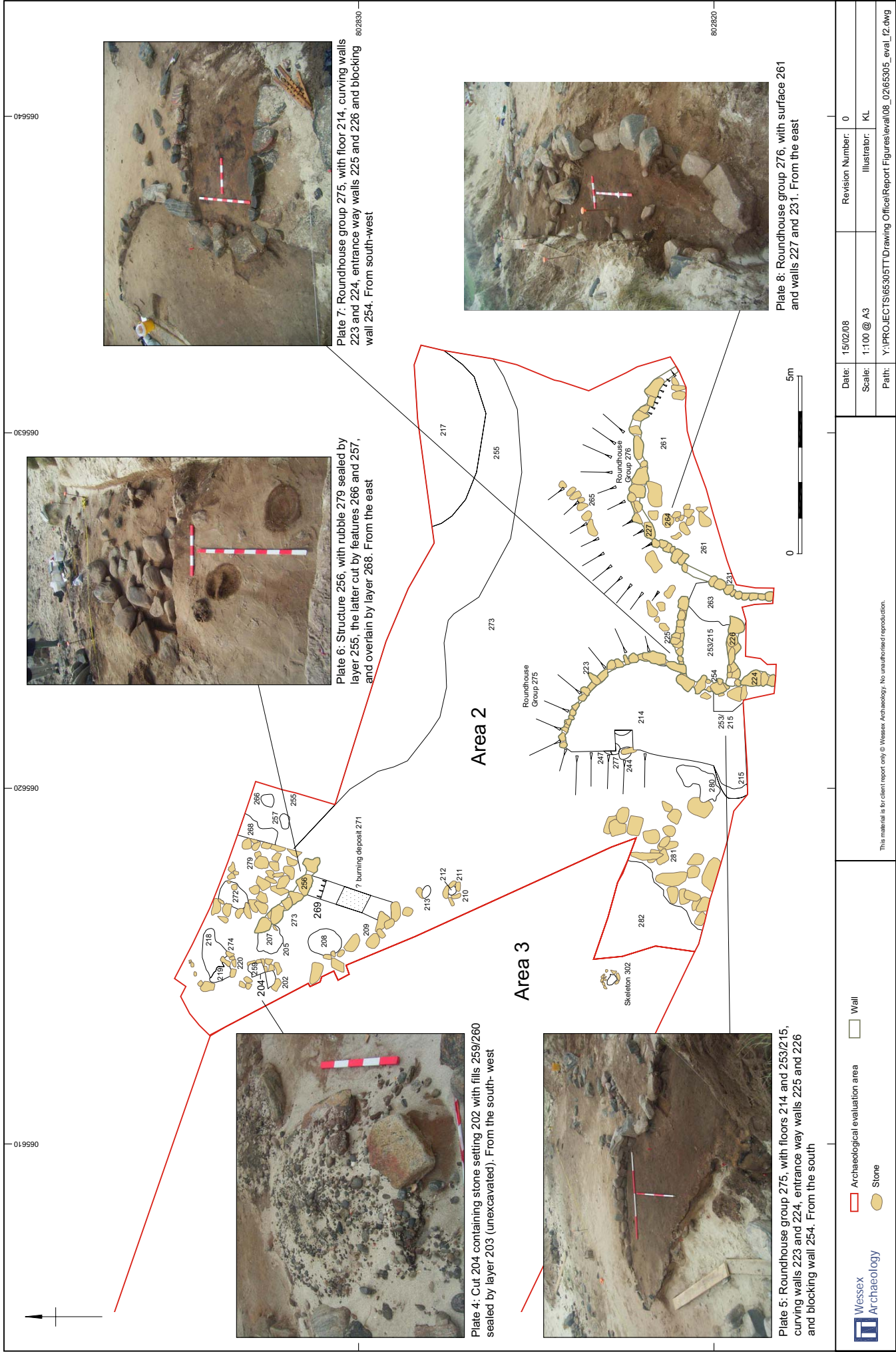
Figure 2

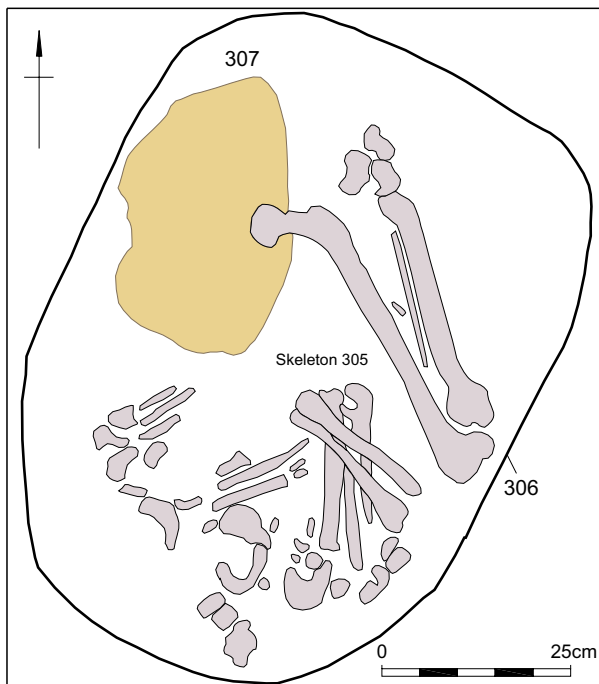


Excavated burials in Areas 1 and 3

Figure 3



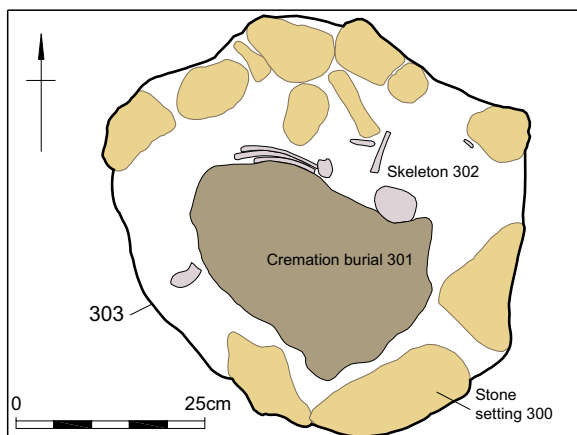




Plan of grave 306
containing
skeleton 305



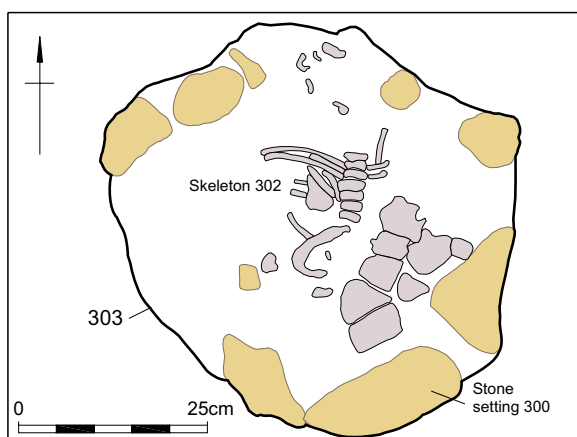
Plate 9: Grave 306 and skeleton 305. From the east



Plan of grave 303, skeletal remains 302 and overlying
cremation 301



Plate 10: Grave 303, skeleton 302 and cremation burial
301. From the north



Plan of grave 303, 300 and 302 following removal of 301



Plate 11: Grave 303, 300 and 302 following removal
of 301. From the north

Stone

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