Project Code: WHCE08
Planning Application Ref No: 08/P/50134
Date of report: February 2010
Client: Dumfries and Galloway Council: Combined Services

WHITHORN CEMETERY EXTENSION

Archaeological Watching Brief

Magnar Dalland
BA MA MEng MIfA

HEADLAND ARCHAEOLOGY Ltd

PROJECT SUMMARY SHEET

Client	DUMFRIES AND GALLOWAY COUNCIL: COMBINED SERVICES
National Grid Reference	NX 4455 4040
Address	WHITHORN CEMETERY, WHITHORN, DUMFRIES AND GALLOWAY
Parish	WHITHORN
Council	DUMFRIES AND GALLOWAY
Planning Application Ref No	08/P/50134
NMRS No	N/A
Oasis No	HEADLAND1-71975
SMR No	N/A
HB/SAM No	N/A
Listing Category	N/A
Project Manager	DR CHRISTOPHER LOWE
Text	MAGNAR DALLAND, SENIOR ARCHAEOLOGIST
Illustrations	JULIA BASTEK, ILLUSTRATOR
Typesetting	CAROLINE NORRMAN, SENIOR ILLUSTRATOR
Fieldwork	MAGNAR DALLAND, SENIOR ARCHAEOLOGIST JÜRGEN VAN WESSEL, ARCHAEOLOGIST / SURVEYOR
Specialists	JULIE FRANKLIN, FINDS SPECIALIST JULIE LOCHRIE, FINDS SPECIALIST DR SCOTT TIMPANY, ENVIRONMENTAL SPECIALIST - ARCHAEOBOTANY
Schedule	
Fieldwork	DECEMBER 2009
Report	FEBRUARY 2010

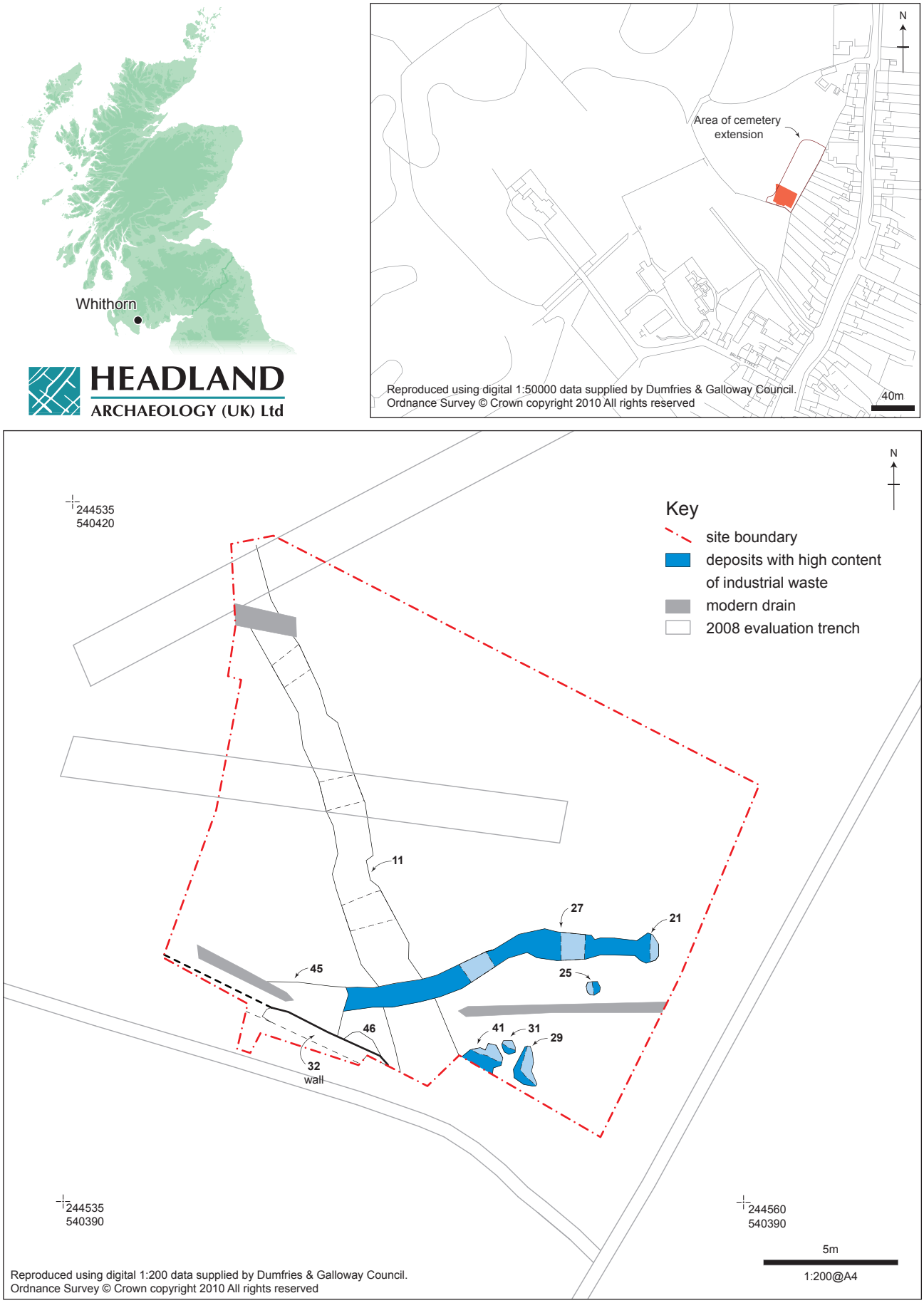
Signed off by: C. E. Lowe .....

Dr Christopher Lowe BA(Hons) MA PhD FSA Scot MIfA, Project Manager

Date: 10th February 2010

CONTENTS

LIST OF ILLUSTRATIONS



Illus 1
Location plan

WHITHORN CEMETERY EXTENSION

Archaeological Watching Brief

by Magnar Dalland

Headland Archaeology (UK) Ltd carried out an archaeological watching brief during topsoil stripping of ground chosen for development as part of the extension to the existing cemetery at Whithorn, Dumfries and Galloway. The fieldwork was carried out at the beginning of December 2009.

A small number of features were recorded during the watching brief including ditches, pits and a dry-stone revetment wall. The features represented activity that could be split into four different phases based on the site stratigraphy. The oldest phase was represented by a large drain or boundary ditch. This was followed by an industrial phase signified by a gully and several pits filled with soil containing charcoal, slag and fragments of furnace lining. The latest phase was represented by the dry-stone revetment wall, most likely to be associated with the current cemetery to the south of the site.

1 INTRODUCTION

An archaeological watching brief was undertaken during topsoil stripping of ground chosen for development as part of the extension to the existing cemetery at Whithorn, Dumfries and Galloway. The watching brief was triggered by the results of an evaluation carried out in October 2008 (Dingwall 2008) of a field covering 4600m^2 to the north of the existing cemetery.

Due to environmental concerns only a small strip along the south-east side of this field was considered to be suitable for the cemetery extension. Based on the results from the evaluation, the watching brief focussed on the south end of the extension covering an area of 288m^2 (Illus 1).

The fieldwork took place over four days from the 3rd to the 8th of December and the project was commissioned by Dumfries and Galloway Council Combined Services Department

2 ARCHAEOLOGICAL BACKGROUND

Whithorn has been the focus for much excavation over the past century and as a result much is known about the early ecclesiastical site which appeared in the 6th century and developed over the following thousand years. Previous work in and around the site has largely been focussed on the remains of the medieval priory and the adjacent Northumbrian site, revealing numerous structures and deposits directly relating to the religious activity. Excavations at the comparable Early Historic monastic site at Hoddom (Lowe 2006) have demonstrated that a developed and highly regulated suite of service sector buildings was established around the perimeter of the settlement and maintained there for some considerable time, and work carried out by Headland Archaeology in 2001 and 2003 (Morrison 2001; Morrison 2003) to the north and west of the scheduled area established that this may also be the case at Whithorn. During this work the densest concentration of features was found to be in the east of the Manse Field.

An evaluation carried out in October 2008 on the ground originally proposed for the cemetery extension identified two areas of higher archaeological potential situated in the north-west and south-east corners of the field (Dingwall 2008). It was recommended that a watching brief was carried out during the topsoil strip of these two areas. Due to the reduction of the area suitable for development, only the archaeological features at the south-east corner would be affected.

3 OBJECTIVES AND STRATEGY

The objective of the watching brief was to identify and fully record all archaeological remains that would be affected by the development.

The topsoil stripping of the entire development area was carried out under archaeological supervision. Work proceeded from the south to north, starting at the sensitive area at the south-east corner.

4 METHOD

4.1 Topsoil stripping

The topsoil was removed down to the natural subsoil using a JCB type excavator equipped with a toothless ditching bucket. The bedrock is very close to the surface in this

Illus 2
Incised lines on slate fragment from fill of pit [31]

area, and as a result the bedrock was in places exposed directly below the topsoil. Cut into the bedrock, a very shattered greywacke, were a number of archaeological features.

The area containing features exposed during the topsoil stripping was cleaned by hand and all features were recorded.

4.2 Recording

All recording followed Headland Archaeology Ltd standard procedures and was in accordance with the codes of practice of the Institute for Archaeologists. All contexts and environmental samples were given unique numbers and all recording was undertaken on pro forma record cards that conform to accepted archaeological norms. All stratigraphic relationships were recorded.

Colour transparencies and black and white print photographs were taken to record archaeological contexts and to illustrate the progress of the excavation. A graduated metric scale was clearly visible in record photographs of contexts. All photographs were recorded by individual print number and included information on the context and direction taken.

An overall site plan at an appropriate scale and relative to the National Grid was recorded by digital survey using a total station linked to an on-site PC equipped with CAD software. Sections through individual features were recorded by survey.

4.3 Samples

Archaeological deposits were sampled as appropriate in accordance with standard environmental sampling practice. Bulk samples were taken for wet sieving and flotation; these were processed and assessed.

5 RESULTS (Illus 1)

A full description of features and deposits is provided in Appendix 1. Lists of records are summarised in Appendices 2 – 4. The finds catalogue and assessment form Appendix 5 and the palaeoenvironmental sample assessment can be consulted in Appendix 6.

As predicted from the evaluation all features were confined to a region measuring some 15m by 20m at the south end of the area. The main feature was a ditch [11] that was aligned north to south and extended across the entire area. This ditch had been recorded in Trench 9 during the evaluation in 2008. It was exposed over a distance of some 20m and continued beyond the site boundaries to the north and south. The ditch was up to 2.2m wide and 0.4m deep and was cut into bedrock. As a result the outline was slightly irregular as it bypassed areas of harder and less shattered bedrock. The profile was generally gently rounded but more uneven in places where it cut into the harder bedrock. The cut appeared to be best preserved at the south end as it petered out at the north corner of the excavation area. The base of the ditch sloped down towards the north.

The ditch was cut at roughly right angles by a narrower linear feature [27] at the south end of the area. This gully was also partly cut into bedrock but was only 0. 55m to 1.1m wide and 0.15m deep. It was slightly sinuous and aligned down the slope from the east to the west. Again, the sinuous and irregular outline seems to be dictated by the nature of the bedrock. The gully was 12m long. It terminated in an oval pit [21] at the east end and was cut by a sub-rectangular pit [45] at the lower west end. The fill contained charcoal and significant amounts of slag and fragments of burnt and, in some cases, vitrified clay.

There were four pits and postholes located in the area to the south of gully [27]. Two of these, [25] and [31] were circular or sub-circular deep steep sided cuts that may represent postholes. The two other cuts [29] and [41] were wider, shallower and with an irregular outline that may indicate that they represented inter-cutting oval pits. However it was not possible to distinguish between the fill of presumed overlapping cuts and they were therefore recorded as single features. The fills of all these four cuts were quite similar to that of pit [21] and gully [27]: dark grey silty sand with numerous bits of charcoal and several lumps of slag and fragments of burnt and, sometimes, vitrified clay. From Pit [31] was also recovered a small piece of incised slate (Illus 2), possibly a reused roof slate given the presence of mortar on its underside. The design

Illus 3
Revetment wall [32] along south side of site

appears to show an incised cross-mark inside a lightly incised oval.

The north sides of two larger pits were recorded emerging out from underneath the south edge of the stripped area. Pit [46] was situated on the west side of ditch [11] where it emerged out from the south baulk. It extended just 0.5m into the trench but had a curving outline that indicated an overall size of just under 2m. Pit [45] lay immediately to the west. It had straight sides forming a right-angled corner to the north-east, indicating a sub-rectangular form. This pit was some 3m long and over 1.8m wide and truncated the west end of gully [27]. The fills of these two pits were similar: grey brown silty sand with few inclusions.

The two larger pits both lay below a low dry-stone wall [32] that ran northwest to southeast along the south edge of the stripped area. It was built from stones deriving from the local bedrock and formed a straight wall face to the north that was up to 0.4m high (Illus 3). The wall face extended some 4.5m east to west, but the presence of a large number of stones along the edge of the area to the west suggest that it originally extended at least up to the south-west corner (shown as a dashed line on Illus 1), indicating a length of over 9m. A slot was cut across the wall, demonstrating that this was a single-sided revetment wall with rubble [33] filled up against its south side. This rubble continued up to the base of the current cemetery wall along the south side of the site.

The deposits removed by machine comprised two layers. The entire site was covered by a layer of mid brown sandy silt [36] overlying bedrock and containing numerous shattered and angular stones deriving from the underlying bedrock but very little charcoal. A second deposit [35] was recorded on top of [36] in the south corner of the site comprising black to dark grey silty sand containing bits of coal, charcoal and 19th and 20th century potsherds. The deposit was deepest along the end garden walls to the east and thinned out towards the west. A local resident reported that this soil had been brought in from Isle of Whithorn where it had been offloaded as ballast from ships arriving from Ireland.

6 DISCUSSION

The features investigated during the watching brief can be separated into four chronological groups based on stratigraphical observations.

6.1 Ditch

The large ditch [11] is likely to be the oldest feature in the area. At first it appeared to be truncated to the north as it became more narrow and shallow at this end, but considering the fact it was cut into bedrock and that the topsoil was generally fairly shallow in this area any truncation would have been quite limited. It is therefore likely that its reduced width and depth towards the north represent its original shape. The ditch slopes towards the north and would therefore function as a drain, but it is

also likely that it has been functioning as a boundary marker defining a property or an enclosure.

6.2 Gully and smaller pits

Gully [27] clearly post-dated the ditch [11]. Its fill was very similar to pit [21] at its east end and four smaller pits and postholes to the south indicating that these features were roughly contemporary. Their fill contained numerous bits of charcoal as well as lumps of slag and fragments of burnt clay. Some of the burnt clay fragments had glassy vitrified surfaces indicative of being fragments of furnace lining. Amongst the slag was a small split bloom weighing over 870g.

The amount of slag, prill and bits of furnace lining recovered from these fill indicates that there was industrial activity relating to iron smelting and smithing going on in the area. The gully might have had some function in these processes. Some of the cuts located to the south of the gully may be bases of small furnaces although there was no clear concentration of furnace lining or sign of heat-affected bedrock along the base of these pits. However the concentration of slag from these contexts is a clear indication of this being an area of iron working. Although the fill of the large ditch contained some isolated bits of slag and furnace lining, the concentration was very low compared with the later gully and pits. It probably represents intrusive material located in the upper parts of the ditch fill. The scarcity of industrial material in the ditch fill suggests that the industrial activity post-dates the large ditch.

In addition to the large amounts of metal debris these samples also produced evidence of agricultural activity and possible cereal processing taking place near to the site. The seed assemblage retrieved from the fills of gully [27] and pit [29] has a composition of species that are suggestive of a medieval date for the second phase (Appendix 6).

6.3 Large pits

The large pit [45] clearly cut gully [27]. Its fill contained low concentrations of charcoal and slag suggesting that it was infilled after the industrial activity associated with the previous phase had ceased. Pit [46] to the east had a similar fill to pit [45] and is therefore assumed to be roughly contemporary with it. The function of these pits remains unclear.

6.4 Revetment wall

The revetment wall [32] appears to be associated with the current cemetery wall along the south side of the site. It forms a revetment to deep deposits of rubble over which the current cemetery wall was built. It is possible that the rubble was deposited in an attempt to deepen the soil for the current cemetery and that the revetment was built to stop the rubble spreading too far into the field to the north.

SOURCES

Dingwall, K 2008 *Proposed Cemetery Extension, Whithorn, Dumfries and Galloway*. Unpublished report to Dumfries & Galloway Council.

Lowe, C 2006 *Excavations at Hoddom, Dumfriesshire: an early ecclesiastical site in South-West Scotland*. Edinburgh.

Morrison, J 2001 *An Archaeological Evaluation at Whithorn, Dumfries and Galloway*. Unpublished report to the Whithorn Trust.

Morrison, J 2003 *Research and Training Excavation in the Manse Field, Whithorn, Dumfries & Galloway: Data Structure Report*. Unpublished report to the Whithorn Trust.

APPENDICES

Appendix 1 Context Register

Context	Over	Description	Dimensions
1	–	Topsoil and Turf. Allocated during evaluation 2008	Depth: 0.1m
2 - 9	–	Contexts recorded during evaluation 2008	–
10	11	Fill of ditch [11]. Grey brown silty clay with abundant angular stones and occasional flecks of charcoal. Short segment recorded in 2008.	Width: 1.3m Depth: 0.4m
11	37	Slightly irregular linear cut. The line of the cut is partly dictated by the hardness of the partly shattered bedrock. The profile is generally gently rounded but more uneven in places where it cuts into harder bedrock. The cut appears to be best preserved at the south end. It peters out at the north corner of the excavation area. The base of the ditch slopes down towards the north. Short segment recorded in 2008.	Width: 1.1 to 2.2m Depth: 0.4m
12 -13	–	Contexts recorded during evaluation 2008	–
14	15	Same as (10). Fill of ditch [11] in north slot	Width: 1.2m Depth: 0.1m
15	37	Same as [11]. Cut of ditch in north slot.	Width: 1.2m Depth: 0.1m
16	17	Same as (10 and 14). Fill of ditch [11] in middle slot	Width: 1.5m Depth: 0.35m
17	37	Same as [11 and 15]. Cut of ditch in middle slot.	Width: 1.5m Depth: 0.35m
18	19	Same as (10, 14 and 16). Fill of ditch [11] in south slot	Width: 1.7m Depth: 0.35m
19	37	Same as [11, 15 and 17]. Cut of ditch in south slot	Width: 1.7m Depth: 0.35m
20	21	Fill of [21] oval terminus of linear cut [27]. Mid brown silty sand with occasional bits of charcoal.	Length: 0.9m Width: 0.7m Depth: 0.27m
21	37	Oval terminus of linear cut [27]. Irregular sides, uneven base.	Length: 0.9m Width: 0.7m Depth: 0.27m
22	27	Same as (26). Fill of linear cut [27] at eastern slot.	Width: 1.0m Depth: 0.1m
23	24	Upper fill in posthole/pit [25]. Orange grey sandy silt with lumps of burnt clay, slag and bits of charcoal.	Length: 0.55m Width: 0.50m Depth: 0.12m
24	25	Lower fill in posthole/pit [25]. Dark grey sandy silt. Much darker than the upper fill (23) due to a higher content of charcoal.	Length: 0.50m Width: 0.45m Depth: 0.10m
25	37	Sub-circular cut with two distinct fills. Pit or possibly a posthole. Steep sides, rounded base.	Length: 0.55m Width: 0.50m Depth: 0.25m
26	27	Fill of linear cut [27]. Brown silty sand with bits of charcoal, lumps of slag and burnt clay (possible furnace lining?). Contain many angular stones. Same as (22).	Width: 0.8m Depth: 0.12m
27	10	Sinuous linear cut 12 m long. Line of cut appears to diverge around areas of harder, less fractioned bedrock. Cuts clearly into the fill of trench [11]. Emerges from oval pit [22] to the east and runs down slope to the west where it is truncated by pit [45].	Length: 12m Width: 0.55 to 1.1m Depth: 0.15 m
28	29	Fill of pit [29]. Mid grey clayey silt with lumps of slag and bits of charcoal. Higher concentration of charcoal towards the base of the pit.	Length: 1.5m Width: 0.7m Depth: 0.2m

Context	Over	Description	Dimensions
29	37	Banana shaped cut. Possibly two intercutting oval pits. Irregular and stepped sides and a very uneven base cut into bedrock.	Length: 1.5m Width: 0.7m Depth: 0.2m
30	31	Fill of pit [31]. Dark grey silty clay containing some lumps of slag, charcoal and small stones. The fill becomes darker towards the base of the pit.	Length: 0.6m Width: 0.5m Depth: 0.47m
31	37	Steep sided oval cut into bedrock. Steep sides, rounded base. Pit or possible posthole.	Length: 0.6m Width: 0.5m Depth: 0.47m
32	34, 36, 44, 47	Dry-stone wall aligned northwest to southeast. The wall face to the north was up to 0.4 m high with rubble infill (33) behind to the south. The wall was situated along the south-west edge of the excavation area.	Length: 8m Width: 0.4m Height: 0.4m (wall-face)
33	44	Stone rubble comprising angular shattered bedrock seen in slot across wall [32]. Represents deposits of stone rubble deposited up against revetment wall [32]. The deposits slope upwards from the top of the wall towards the east where it sits at the base of the present cemetery wall.	–
34	45	Fill of cut [45]. Light grey brown silty sand. Fill of large pit that appear to continue in under wall [32].	Length: ≥ 3m Width: ≥1.8m Depth: 0.25m
35	36	Black to dark grey silty sand located below turf in the south corner of the site. The soil contained bits of coal, charcoal and 19th / 20th century potsherds. The deposit was deepest along the end garden walls to the east and thins out towards the west. Local resident reported that this soil had been brought in from Isle of Whithorn where it had been offloaded as ballast from ships arriving from Ireland.	–
36	37	Mid brown sandy silt overlying bedrock. Contains numerous shattered and angular stones deriving from the underlying bedrock.	–
37	–	Natural substrata comprising shattered angular bedrock (greywacke) and areas of brown silty sand.	–
38	39	Fill of modern pipe trench [39]. Re-deposited top- and sub-soil.	–
39	35, 36	Cut of modern pipe trench cutting east to west across the south corner of the site. Cut into the top of wall [32] along the south-west side of the trench.	–
40	41	Fill of irregular pit [41]. Dark grey to black clayey silt containing lumps of slag, charcoal and small stones.	Length: ≥ 1m Width: 1.1m Depth: 0.15m
41	37	Cut of irregular pit that continues in under unexcavated area to the south. Sloping sides, irregular base. Might be two inter-cutting oval pits.	Length: ≥ 1m Width: 1.1m Depth: 0.15m
42	43	Fill of rubble drain [42]. Angular stones in a matrix of grey silty sand.	–
43	34	Cut of rubble drain aligned parallel with and 0.4 m to the northeast of wall [32]. Not excavated.	Length: ≥ 4m Width: 0.4m
44	–	Mid brown silty sand. Deposit seen in slot trench through revetment wall [32]. The deposit is situated below wall [32] and contained a large lump of slag. May be the same as (34).	–
45	26	Large cut emerging out from below wall [32]. Cuts across linear cut [27] and is cut by rubble drain [43].	Length: ≥ 3m Width: ≥1.8m Depth: 0.25m
46	37	Cut emerging out from below wall [32] to the southeast of cut [45]. Not excavated	Length: ≥ 1.6m Width: ≥0.5m
47	46	Mid brown silty sand, fill of cut [46]. Not excavated.	Length: ≥ 3m Width: ≥1.8m

Appendix 2 Photographic Register

Shot No.	B/W Prints	Slides	Digital file name	Direction facing	Description
1-28	1	1	–	–	Photos taken during evaluation in 2008 (Job 001)
29	1	1	WHCE08-002-Pic29.JPG	W	Slots cut across linear cut [27]. Oval terminal [21] in the foreground.
30	1	1	WHCE08-002-Pic30.JPG	W	Oval terminal [21] at E end of linear cut [27] half-sectioned
31	1	1	WHCE08-002-Pic31.JPG	W	Slot cut across the west half of linear cut [27]
32	1	1	WHCE08-002-Pic32.JPG	N	Slots cut across linear cut [11] seen from the S end
33	1	1	WHCE08-002-Pic33.JPG	S	Slots cut across linear cut [11] seen from the N end
34	1	1	WHCE08-002-Pic34.JPG	S	N-facing section of middle slot across [11]
35	1	1	WHCE08-002-Pic35.JPG	N	N-facing section of middle slot across [11]
36	1	1	WHCE08-002-Pic36.JPG	E	Circular pit/posthole [25] half-sectioned
37	1	1	WHCE08-002-Pic37.JPG	SW	Sub-circular cut [31] half-sectioned
38	1	1	WHCE08-002-Pic38.JPG	SW	Irregular cut [41] half-sectioned
39	1	1	WHCE08-002-Pic39.JPG	W	'Banana'-shaped pit [29] half-sectioned
40	1	1	WHCE08-002-Pic40.JPG	SW	Revetment wall [32]

Appendix 3 Sample Register

Sample No	Context No	Volume	Description
1 - 2	–	–	Evaluation 2008
3	010	10 l	Fill of ditch [011]
4	016	10 l	Fill of ditch [011] at middle slot
5	018	10 l	Fill of ditch [011] at south slot
6	020	10 l	Fill of oval terminus of ditch [027]
7	023	2 l	Upper fill in pit [025]
8	024	2 l	Lower fill in pit [025]
9	022	10 l	Fill of linear cut [027] at east slot
10	026	10 l	Fill of linear cut [027] at west slot
11	028	10 l	Fill of oval pit [029]
12	030	10 l	Fill of circular pit [031]
13	034	10 l	Fill of pit [045] to the north of and below wall [032]
14	040	10 l	Fill of irregular pit [041]

Appendix 4 Register of digitally recorded profiles

File name	Description
WHCE08-002-C17-section.dwg	North-facing profile across ditch [11] at middle slot
WHCE08-002-C19-section.dwg	South-facing profile across ditch [11] at south slot
WHCE08-002-C20-section.dwg	East-facing profile across oval pit [21] at east terminus of gully [27]
WHCE08-002-C25-section.dwg	West-facing profile across pit [25]
WHCE08-002-C27-section.dwg	North-east-facing profile across gully [27] at west slot
WHCE08-002-C29-section.dwg	North-east-facing profile across pit [29]
WHCE08-002-C31-section.dwg	North-facing profile across pit [31]
WHCE08-002-C32-section.dwg	West-facing profile across wall [32], and rubble infill (33)
WHCE08-002-C41-section.dwg	North-facing profile across pit [41]

Appendix 5 Finds Assessment

Julie Franklin & Julie Lochrie

Introduction

The assemblage was small and dominated by ironworking waste. Other finds such as pottery and glass point towards activity in the post-medieval and modern periods. Unfortunately there are no finds associated with the ironworking waste to help date this activity.

Pottery & Finds

There were five sherds of pottery, and a handful of glass, stone and iron finds. The earliest of the pottery was unfortunately unstratified. It was a locally made jug handle, dating to the 16th or 17th century. The remaining pottery and glass was all modern. One piece of used roof slate has incised markings on the surface. These may relate to the slating process or it may have been an older piece of stone reused for roofing.

Iron-Working Waste

The iron-working waste included ceramic furnace lining, slag lumps, plano-convex slag cakes, slag spheres and magnetic residue. It totalled 11.308 kg in weight. The types of waste present are more suggestive of smithing than smelting. The plano-convex slag cake pieces are small and dense with no traces of charcoal and are thus more likely to relate to smithing. Though it is possible that some of the remains are from smelting, there is no conclusive proof of it in this assemblage.

Discussion

The modern finds were concentrated in Context [35]/[36]. Other fragments are probably intrusive as they are small enough to have been moved by worms. The ironworking material was concentrated in linear cut fill [26] (4.5 kg) and pit fill [40] (4.2kg), though it is spread through another 12 contexts. Though none of the remains appear to be *in situ*, they indicate iron-working was going on in the vicinity of these features. There is no means of dating this activity at present, though it is unlikely to be contemporary with the modern finds from the industrial age. Evidence of non-ferrous metalworking was discovered at Whithorn during previous excavations (Hill & Nicholson 1997, 400-4), dating to the medieval and early historic periods.

References

Hill, P & Nicholson, A 1997 'Moulds, Crucibles and Related Metalworking Debris', *in Hill, P* 1997 Whithorn and St Ninian: the Excavation of a Monastic Town, 1984-91 Stroud, 400-4

Table A5.1
Finds Catalogue

Context	Sample No	Material	Qty	Weight (g)	Object	Description	Spot Date	Period	Box No
U/S	-	Pottery	1	-	Post-Medieval	PMR jug strap handle, olive glazed, soft grey fabric with pale red surfaces	16th/17th	PM	1
10	-	MWD	-	67	Furnace Lining	-	-	-	2
10	3	MWD	-	1	Magnetic Residue	-	-	-	2
16	4	MWD	-	-	Iron Waste	-	-	-	2
16	4	MWD	-	1	Magnetic Residue	-	-	-	2
18	5	CBM	-	1	Furnace Lining	-	-	-	2
18	5	MWD	-	-	Iron Waste	-	-	-	2
18	5	MWD	-	2	Magnetic Residue	-	-	-	2
20	6	CBM	-	1	Furnace Lining	-	-	-	2
20	6	MWD	-	1	Iron Waste	-	-	-	2
20	6	MWD	-	2	Magnetic Residue	-	-	-	2
20	6	MWD	-	-	Slag Spheres	-	-	-	2
22	9	CBM	-	2	Furnace Lining	-	-	-	2
22	9	MWD	-	67	Iron Waste	-	-	-	2
22	9	MWD	-	7	Magnetic Residue	-	-	-	2
22	9	MWD	-	-	Slag Spheres	-	-	-	2
23	7	CBM	-	7	Furnace Lining	-	-	-	2

Context	Sample No	Material	Qty	Weight (g)	Object	Description	Spot Date	Period	Box No
23	7	Glass	1	-	Fragment	Clear, possibly intrusive?	-	Mod	1
23	7	MWD	-	13	Iron Waste	-	-	-	2
23	7	MWD	-	11	Magnetic Residue	-	-	-	2
23	7	MWD	-	-	Slag Spheres	-	-	-	2
24	8	CBM	-	3	Furnace Lining	-	-	-	2
24	8	Lithics	2	-	Flint Chips	-	-	-	1
24	8	MWD	-	126	Iron Waste	-	-	-	2
24	8	MWD	-	74	Magnetic Residue	-	-	-	2
24	8	MWD	-	-	Slag Spheres	-	-	-	2
26	10	CBM	-	41	Furnace Lining	-	-	-	2
26	10	MWD	-	126	Iron Waste	-	-	-	2
26	-	MWD	-	2244	Iron Waste & Furnace Lining	Bag 1 of 2 - large lumps	-	-	2
26	-	MWD	-	2042	Iron Waste & Furnace Lining	Bag 2 of 2 - large lumps including plano-convex slag cake	-	-	2
26	10	MWD	-	15	Magnetic Residue	-	-	-	2
26	10	MWD	-	-	Slag Spheres	-	-	-	2
28	11	CBM	-	32	Furnace Lining	-	-	-	2
28	11	Fe	1	-	Lump	-	-	-	1
28	11	MWD	-	575	Iron Waste	-	-	-	2
28	11	MWD	-	20	Magnetic Residue	-	-	-	2
28	11	MWD	-	1	Slag Spheres	-	-	-	2
30	12	CBM	-	22	Daub	Furnace Lining	-	-	2
30	12	MWD	-	642	Iron Waste	-	-	-	2
30	12	MWD	-	46	Magnetic Residue	-	-	-	2
30	12	MWD	-	-	Slag Spheres	-	-	-	2
30	12	Stone	1	-	Slate	Roof slate fragment with one finished edge and mortared underside, score marks in surface	-	-	1
34	13	CBM	-	1	Fragments	-	-	-	2
34	13	Glass	1	-	Fragment	Clear, possibly intrusive?	-	Mod	1
34	13	MWD	-	48	Iron Waste	-	-	-	2
34	13	MWD	-	2	Magnetic Residue	-	-	-	2
34	13	MWD	-	-	Slag Spheres	-	-	-	2
35/36	-	Glass	3	-	Bottle & Vessel	Large sherds from two beer bottles with embossed lettering, "-nger & Co L-"& "-lloa" (Alloa); a turquoise blue handle from a cup or similar small vessel	19th/20th	Mod	1
35/36	-	Pottery	3	-	Modern	Blackware, rockingham teapot spout & transfer printed whiteware	19th/20th	Mod	1
40	14	CBM	-	-	Fragments	-	-	-	2

Context	Sample No	Material	Qty	Weight (g)	Object	Description	Spot Date	Period	Box No
40	14	Fe	7	-	Fragments	Attached to stone	-	-	1
40	14	Fe	1	-	Nail	Shaft tip	-	-	1
40	14	Lithics	1	-	Flint Flake	-	-	-	1
40	14	MWD	-	1167	Iron Waste	-	-	-	2
40	-	MWD	-	111	Iron Waste	-	-	-	2
40	14	MWD	-	279	Magnetic Residue	-	-	-	2
40	14	MWD	-	2634	Retent/Iron Waste	retent unsorted due to lack of time, but made up of 90% slag	-	-	2
40	14	MWD	-	1	Slag Spheres	-	-	-	2
40	14	Pottery	1	-	Fragment	Tiny, white glaze, poss intrusive?	18th/20th	Mod	1
44	-	MWD	-	873	Iron Waste	Plano-convex slag cake	-	-	2

Appendix 6 Palaeoenvironmental Sample Assessment Report

Dr Scott Timpany

Introduction

Twelve samples were taken during the watching brief at Whithorn Cemetery and all were processed for palaeoenvironmental assessment. The samples were taken from ditch and pit features discovered during the watching brief. The assessment aims to look at what the palaeoenvironmental potential of the material is and what evidence this material is showing us for the activities which once took place at the site.

Method

Samples were processed in laboratory conditions using a standard floatation method (*cf.* Kenward *et al*, 1980). All plant macrofossil samples were analysed using a stereo-microscope at magnifications of x10 and up to x100 where necessary to aid identification. Identifications were confirmed using modern reference material and seed atlases including Cappers *et al* (2006).

Results

The results of the sample processing are provided in Tables 1 (Retent finds) and 2 (Floatation finds). Suitable material for AMS dating is also identified within each table. All plant remains were preserved through charring.

Plant remains

Charred cereal grains were present in all samples, with the exception of Sample 14. The charred cereal assemblage is dominated by oat (*Avena sp.*) and hulled barley grains (*Hordeum vulgare*), with a rare occurrence of grains of spelt wheat (*Triticum spelta*). Grains so badly degraded that they cannot even be identified to type have been recorded as *Cerealia indet* and are present in two samples (04 and 13) (see Table 2). The grains were observed to be in a generally good state of preservation, however, some samples did contain poorly preserved grain, which was abraded and broken.

Together with the charred grain a number of wild taxa were present in the assemblage (see Table 2). These are all arable weed types and include: docks (*Rumex sp.*), corn marigold (*Chrysanthemum segetum*), knotgrasses (*Persicaria sp.*) and daisies (*Asteraceae sp.*) (Clapham *et al*, 1962; Greig, 1988; Stace, 1997).

Small quantities of charred hazel (*Corylus avellana*) nutshell were present in four samples (see Table 1). Charcoal fragments are present in all samples and with the exception of one sample (04) contain charcoal fragments of a size suitable for identification and/or Accelerated Mass Spectrometry (AMS) dating (see Tables 1 and 2).

Other finds

Together with the charred plant remains the samples also contained a number of other finds. Metallic waste debris, magnetic residue and prill dominate the other finds assemblage with one or a combination of, being present in all samples (see Table 1 and 2). Daub is present in rare to abundant quantities in all but two samples (03 and 04). Iron (Fe) objects were recovered from two samples (11 and 14), while pottery fragments were present in one sample (14). Lithics and stone finds were both recovered from two samples, 12 and 14, and 08 and 14, respectively. Glass was found within two samples (12 and 14) as was glass waste (13 and 14). Burnt bone was present in rare to common quantities within all but three samples (09, 10 and 12), while unburnt bone was recovered from six samples (03, 05, 06, 10, 11 and 14) (see Tables 1 and 2). Four samples (06, 09, 13 and 14) contained cinder; while two samples (10 and 13) contained coal fragments (see Tables 1 and 2).

Discussion

The samples are discussed below by the emerging themes coming out of the samples in terms of activity at the site

Agricultural activity

The charred cereal assemblage suggests agricultural activity was taking place in the vicinity of the site. The main cultivars can be seen from the assemblage to have been oat and hulled barley; a small quantity of spelt wheat was also present in the fill [28] of oval pit [29]. Of particular interest is the wild taxa assemblage recovered from the samples and especially that from within Sample 09, taken from the east slot fill [22] of linear feature [27]. The assemblage from this sample contained the largest number of arable weed species, such as corn marigold, docks, goosefoots (*Chenopodium sp.*) and daisies (see Table 2). The incidence of these species coupled with the charred grain present suggests some form of grain processing activity was occurring close to this area. The dominance of oat and hulled barley together with the arable weed assemblage would indicate this activity is most likely medieval in date (Greig, 1988).

Metal working

The substantial quantities of metallic waste debris, magnetic residue and prill recovered from the samples (see Tables 1 and 2) indicates that some form of metal working was taking place at the site. The presence of oak (*Quercus sp.*) charcoal fragments in samples containing evidence of metal working suggests that oak was being used as a fuel source for any smelting/smithing activity taking place. Oak is known to burn to high temperatures and would have been a common fuel type used during this process. The metal working activity is further discussed in the finds summary (see Franklin and Lochrie, this report).

Food debris

There is some evidence for the consumption of food at the site with the presence of small quantities of charred hazel nut shell and burnt bone in the samples (see Table 1). It is likely these represent the remains of food debris consumed at the site, which was then discarded into

Context No	Sample No	Feature	Retent Vol (l)	Ceramic	Daub	Glass	Stone	Lithics	Fe Obj	MWD	Mag Res	Prill	Glass Waste	Burnt Bone	Unburnt Bone	Charred Cereal Grains	Charred Corylus Nutshell	Charcoal Qty	Charcoal max size (cm)	Cinders	Material available for AMS	Comments
010	003	Fill of Ditch [011]	10	–	–	–	–	–	–	–	2	–	–	1	1	–	–	1	1.0	–	Charcoal 1	–
016	004	Fill of Ditch [011] at middle slot.	10	–	–	–	–	–	–	1	1	–	–	1	–	–	–	2	0.5	–	–	–
018	005	Fill of Ditch [011] at south slot.	10	–	1	–	–	–	–	1	4	–	–	1	–	1	2	3	1.0	–	Charcoal 3, Nutshell 2	Grain = Hordeum vulgare +
020	006	Fill of oval terminus over Ditch [027]	10	–	1	–	–	–	–	2	4	1	–	1	–	–	2	3	1.5	–	Charcoal 2, Nutshell 2	–
023	007	Upper fill of Pit [025]	10	–	3	1	–	–	–	3	4	1	–	1	–	–	–	1	1.0	–	Charcoal 1	–
024	008	Lower fill of Pit [025]	10	–	2	–	–	1	–	3	4	2	–	1	–	–	–	1	1.0	–	Charcoal 1	–
022	009	Fill of linear cut [027] at east slot	10	–	1	–	–	–	–	3	4	1	–	–	–	–	2	3	1.0	1	Charcoal 2, Nutshell 2	Cinder not retained.
026	010	Fill of linear cut [027] at west slot	10	–	3	–	–	–	–	3	4	1	–	–	–	–	–	2	1.0	–	Charcoal 2, Nutshell 2	–
028	011	Fill of oval Pit [029]	10	–	3	1	–	–	1	4	4	3	–	3	–	–	1	3	1.0	–	Charcoal 3, Nutshell 1, burnt bone 3	–
030	012	Fill of circular Pit [031]	10	–	4	–	1	–	–	4	4	1	1	–	–	–	–	3	1.0	–	Charcoal 2	–
034	013	Fill of Pit [045] to the north of and below wall [041]	10	–	1	1	–	–	–	2	4	1	1	1	–	–	–	1	1.5	1	Charcoal 1	Cinder not retained.
040	014	Fill of irregular Pit [041]	10	1	1	–	2	1	1	4	4	3	–	1	–	–	–	1	1.0	–	Charcoal 1	Whole retent retained due to high level of metallic waste.

Table A6.1
Retent Sample Results
Key: 1 = rare, 2 = occasional, 3 = common and 4 = abundant
NB charcoal over 1cm is suitable for identification and AMS dating

any heat source (e.g. hearths) being used for the metal working activity.

Conclusion

The large quantities of metal working waste recovered in the samples indicate this activity was taking place at the site with debris having been subsequently scattered across the area.

There is some evidence of agricultural activity and possible cereal processing taking place near to the site. The grain and arable weed assemblage suggests this took place in the medieval period.

Small quantities of burnt bone and charred hazel nutshell suggest consumption of food also took place at the site.

References

Cappers, RTJ, Bekker, RM & Jans, JEA 2006 *Digital seed atlas of the Netherlands (Barkhuis Publishing and Groningen University Library, Groningen)*.

Clapham, AR, Tutin, TG & Warburg, EF 1962 *Flora of the British Isles (2nd Edition) (Cambridge University Press, Cambridge)*.

Greig, JRA 1988 'Practical ecology: experiments in growing traditional cornfield weeds and a comment on their archaeological records in Britain.' In Robinson, DE (ed.) *Experimentation and Reconstruction in Environmental Archaeology Symposia of the Association for Environmental Archaeology No.*9 Roskilde, Denmark 1988 (Oxbow Books, Oxford) 41-62

Kenward, HK, Hall, AR & Jones, AKG 1980 *A tested set of techniques for the extraction of plant and animal macrofossils from waterlogged archaeological deposits*. Science and Archaeology 22, 3-15.

Stace, C 1997 *New Flora of the British Isles (2nd edition)*. (Cambridge University Press, Cambridge).

Context No	Sample No	Feature	Total flot Vol (ml)	Cereal grain				Other plant remains	Charcoal Qty	Charcoal Max size (cm)	Material available for AMS	Comments
				Avena sp.	Hordeum vulgare	Triticum spelta	Cerealia indet.					
10	3	Fill of ditch [011]	10	–	1	–	–	–	1	<1	–	–
16	4	Fill of ditch [011] at middle slot	10	–	1	–	1	–	1	<1	–	–
18	5	Fill of ditch [011] at south slot	10	1	2	–	–	–	2	<1	Charred grain 2	Unburnt bone 1
20	6	Fill of oval terminus of ditch [027]	10	2	1	–	–	–	2	1	Charcoal 1, charred grain 2	Unburnt bone 1, Cinder 1, charcoal largely oak fragments
23	7	Upper fill in pit [025]	<10	–	1	–	–	Chrysanthemum segetum 1	1	<1	–	Prill 2
24	8	Lower fill in pit [025]	<10	1	–	–	–	Chenopodium sp. 1	4	<1	–	Prill 3
22	9	Fill of linear cut [027] at east slot	10	3	2	–	–	Chrysanthemum segetum 1, Persicaria sp. 1, Asteraceae sp. 1, Rumex sp. 1, Chenopodium sp. 1	–	–	Charred grain 3	Cinder 1
26	10	Fill of linear cut [027] at west slot	20	2	2	–	–	Rumex sp. 1	1	<1	Charred grain 2	Prill 2, unburnt bone 1, coal 1
28	11	Fill of oval pit [029]	20	2	1	1	–	Chrysanthemum segetum 1	2	1.6	Charcoal 1, charred grain 2	Prill 3, unburnt bone 2, charcoal largely oak fragments
30	12	Fill of circular pit [031]	20	3	1	–	–	–	4	1.3	Charcoal 1, charred grain 3	Prill 2, charcoal largely oak fragments
34	13	Fill of pit [045] to the north of and below wall [032]	25	1	–	–	1	–	1	<1	–	Cinder 1
40	14	Fill of irregular pit [041]	20	–	–	–	–	–	1	<1	–	Prill 4, coal 2, cinder 1, unburnt bone 1

Table A6.2
Flotation Sample Results
Key: 1 = rare, 2 = occasional, 3 = common and 4 = abundant
NB charcoal over 1cm is suitable for identification and AMS dating