Under The Glacier

2012 Archaeological investigations on the fishing station

at Gufuskálar, Snæfellsnes

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Samantekt á íslensku

Frá árinu 2008 hefur farið fram björgunarrarannsókn á verstöðvarminjum á Gufuskálum. Sumarið 2012 var haldið áfram með styrkjum frá National Science Foundation, National Geographic Explorers club og þjóðgarðinum Snæfellsjökli.

Áður hefur rannsóknin fengið styrki frá Fornleifasjóði og Þjóðhátíðarsjóði.

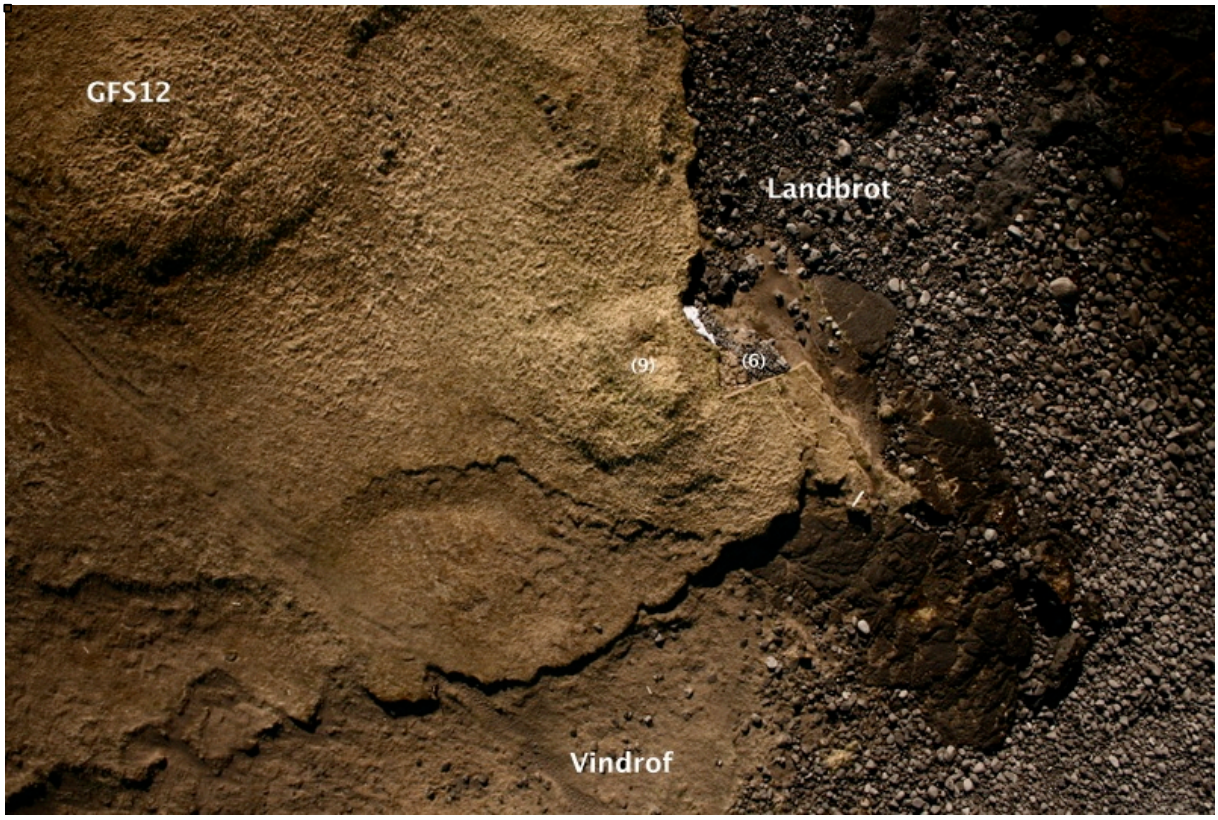
Að rannsókninni koma nokkrir aðilar: Fornleifastofnun Íslands, Fornleifavernd ríkisins, City university in New York, Þjóðgarðurinn Snæfellsjökull og Stirling university, Skotlandi.

Haldið var áfram með skurð 5 frá árinu áður. Þar kom nú meðal annars í ljós grjóthlaðinn inngangur í byggingu sem hefur verið að brotna úr frá 2007. Tekin voru sýni til aldursgreiningar árið 2008 bæði fyrir ofan og neðan byggingu og var niðurstaðan sú að hún er frá fyrrihluta 15. aldar eða 1425 +/- 5 ár. Undir henni eru svo eldri grjóthleðslur. Inngangurinn var grafinn burt og við lok uppgraftar var komið niður á þykkt ruslalag með miklu magni af dýrabeinum.

Myndin sýnir skurð 5 hægra megin á mynd. Inngangurinn á við mannvirkið sem er að brotna vinstra megin á myndinni.

Borað var víða í kringum bæjarhólana og kom í ljós að víðast er um eins metra þykkt sandlag yfir mannvistarlögunum. Ekki fannst öskuhaugur með bornum en hinsvegar fékkst aukaleyfi til að grafa skurð (1m x 2m) í annan bæjarhólanna og í honum sáust þétt og mikil mannvistarlög undir öllum sandinum. Frumniðurstöður Dr. Ian Simpsons gefa til kynna að búseta á Gufuskálum hafi fyrst og fremst snúist um sjósókn en ekki landbúnað. Þetta eru mikilvægar vísbendingar um þróun og tilurð verstöðvarinnar því ein af þeim spurningum sem við leitumst við að svara er hvort Gufuskálar hafi í upphafi verið reist á landbúnaði en með aukinni fiskverslun til Evrópu hafi póllinn sveiflast yfir í sjósókn og landbúnaðurinn orðið til stuðnings verstöðinni.

2012 var einnig opnað nýtt svæði utan um tóft sem talin var vera verbúð. Grjót hefur verið að falla úr hleðslum og var því ákveðið að skoða tóftina áður en meiri skemmdir urðu á henni.



Hér má sjá flugdrekamynd af tóftinni og sést rofið vel á henni, þ.e. Vindrofið neðst á mynd en landbrotið hægra megin.

Í ljós kom að grjóthleðslur stóðu mun betur en ráð var gert fyrir og þegar yfir lauk voru þær vel yfir einum metra á hæð. Ástæðan fyrir þessari góðu varðveislu er hið mikla sandfok sem er á svæðinu. Það hefur fyllt tóftina fljótt af sandi og þannig stutt vel við veggina sem voru lítið fallnir. Þannig hefur hin mikla hreyfing jarðvegs hjálpað til við að vernda þessa byggingu á meðan annarsstaðar á svæðinu stuðlar hún að eyðingu.

Tóftin samanstendur af þremur hólfum og gangi sem tengir þau. Hellulögð stétt er á gangi og á hluta þess rýmis sem túlkað hefur verið sem eldahús. Eins og sést á teikningunni er innsta rýmið ferkantað á meðan eldahúsið er rúnnaðra. Margt bendir til að því hafi verið bætt við síðar en sjá má á hleðslunum og mannvistarlögum þeim tengdum að ýmsar breytingar hafa verið gerðar á tóftinni. Sjá má að inngöngum hefur verið lokað með grjóthleðslum og nýir gerðir, hellulagnir á gólfum lagaðar, veggjahleðslur bættar og eldstæði færð til. Þessar breytingar ásamt áfokssandi eru til marks um árstíðabundna veru.

Hér er vinnumynd tekin með flugdreka af verbúðinni stuttu áður en uppgreftri var lokið. Ekki er búið að upprétta myndina og því virðist skurðurinn ekki hornréttur.

Gerður var skurður (Skurður 10, 1m x 2m) í grjóthleðslur sem eru að blása upp í sandi milli skurða 5 og 9. Í ljós kom að um er að ræða heilmikið mannvirki þar sem veggjahleðslur náðu niður á 1.26m dýpi frá yfirborði og héldu áfram niður. Skurðurinn var of lítill til að grafa dýpra í sandinn öryggisins vegna. Ekki er vitað hvert hlutverk þessa mannvirkis er því ekki var farið niður úr áfokssandi sem fyllir það.

Myndirnar sýna skurð 10.

Yfirborðsmælingar sýndu fram á rof milli ára og höfðu roflínur höfðu færst til. Einnig var hægt að greina rof sem erfitt er að mæla á þennan hátt en með flugdrekamyndum er hægt að fylgjast með breytingum á gróðurþekju og nýjum grjóthleðslum sem koma í ljós. Þetta eftirlit sýnir ekki síður að mikið rof er almennt á svæðinu.

Í desember gerði mikinn storm með allt að 40 metra ölduhæð við Gufuskála. Sandpokar og grjót sem hlaðið hafði verið við rofsár og yfir skurði til að verja þá yfir veturinn, þeyttust tugi metra inn í land. Þá var hægt að elta sandpoka frá skurði 5 niður að fjöru svo augljóst varð hvernig sjórinn gengur tilbaka. Mikið grjóthrun varð úr hleðslum en augljósustu skemmdirnar urðu við verbúðina þar sem veggjahleðslur ógrafins hólfs brotnuðu af. Samkvæmt mælingum okkar hafa á tímabilinu 2008-2013 2,47 metrar brotnað af ströndinni á þessum stað. Meðfylgjandi eru myndir sem sýna frágang við verbúðina (skurð 9) við lok uppgraftar 2012 og svo hvernig hann leit út í byrjun janúar 2013.

Skurður 9 við uppgraftarlok 2012

Hér má sjá ástand minjanna í janúarbyrjun 2013.

Summary in english

The site of the fishing station Gufuskálar is located on the northern side of the western tip of Snæfellsnes peninsula in the West of Iceland. It sits at the shore of the Atlantic ocean which causes a major threat to the site. A dominant feature in the landscape is the cone-shaped 1446m high glacier Snæfellsjökull, known by many from Jules Vernes book "A Voyage to the Centre of the Earth". Underneath the glacier is a volcano which has shaped the surrounding area with several lavaflows, the last one 1750 years ago.[1]

Archaeology is abundant at Gufuskálar with two main mounds made up of structures and midden material right by the seafront along with a cleared landing spot. A little further inland are two farm mounds and at least 47 other structures which most likely are fishing booths, *þurrabúðs*[2] and other structures related to the fishing station. In a lava field East of Gufuskálar are 154 small, oval shaped structures made of lava stone. They are commonly believed to be for drying and storing fish.

Samples taken during the 2008 assessment were used for C14 dating and the results indicate the fishing stations time span might be longer than previously thought.

Following assessment in 2008, when four erosion scars were cleaned back and sections drawn, an archaeological excavation took place in 2011. The focus within the site was on the two main mounds by the sea which are under threat by active marine and wind erosion. Based on work done in 2008[3], four trenches (Tr. Nr. 5,6,7 and 8) were placed in the most eroded areas of the two mounds. A new topographic survey was done on the two mounds but also on other visible structures such as the farm mounds and alleged þurrabúðs. In total, an area of about 7.2 hectares was covered and around 47 structures mapped in.[4] In 2012, work continued in trench 5 but three new trenches were excavated (Tr. Nr. 9, 10 and 11). A topographic survey was also done on the two mounds as well as the erosion faces.

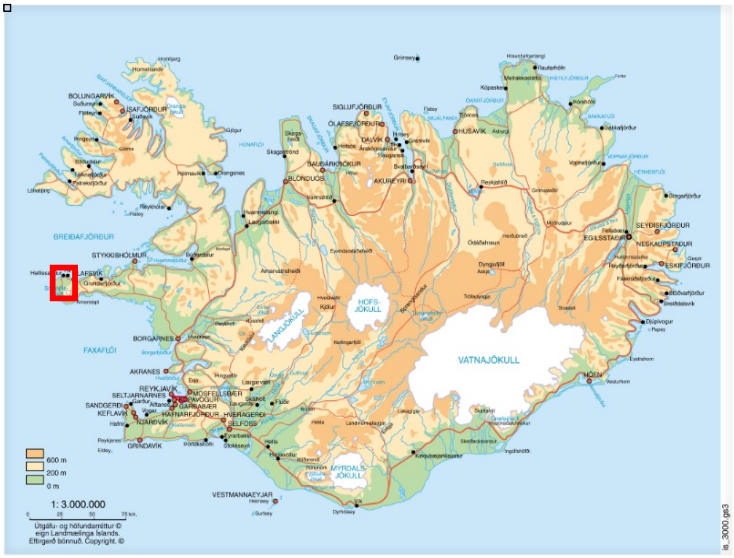


Figure 1 A map showing location of Gufuskálar. Map:Landmælingar Íslands.

1 Thor Thordarson and Ármann Höskuldsson. 2002.

2 Þurrabúð is a house close to a fishing station. It has no land and the occupants live mainly off fishing all year round.

3 Lilja B. Pálsdóttir. 2009.

4 Lilja B Pálsdóttir. 2011.

This investigation was made possible with grants from the National Science Foundation (NSF OPP Arctic Social Sciences 1202692) and the National Geographic Explorers Club. Special thanks go also to Sæmundur Kristjánsson at Rif, Skúli Alexandersson at Hellissandur and Þór Magnússon at Gufuskálar, for valuable information, kind support and interest in the project. Last but by no means least we would like to thank Guðrún Lára Pálmadóttir for her support and help during the open day on site. Thanks go also to the Icelandic Forest Service for permission to conduct the investigations within the Gufuskálar land.

Figure 2 The Gufuskálar 2012 team. Back row: Grant, Joseph, Scott, Frank. Ian, Phredd, Megan, Brenda. Front row: Sankt Mukh, Lilja, Emily, Holly, Ágústa.

Introduction

The fieldwork at Gufuskálar took place during a 4 week excavation season, between June 6th and June 24th 2011. This archaeological investigation is a collaboration of several institutions:

Fornleifastofnun Íslands (FSÍ), City University of New York (CUNY), The Archaeological Heritage Agency of Iceland (FVR), The National Park of Snæfellsjökull and Stirling University, Scotland. It is a GHEA project (http://Gheahome.org -Ghea: Global Human Ecodynamics Alliance) and NABO (Http://nabohome.org –North Atlantic Biocultural Organisation).

The investigation was directed by Lilja Björk Pálsdóttir (FSÍ) with assistance of an international team consisting of Frank Feeley (Cuny), Dr. Ágústa Edwald (FSÍ), Prof. Ian Simpson (Stirling), Emily Lowe (Stirling) Megan T. Hicks (Cuny), Óskar Gísli Sveinbjarnarson (FSÍ), Santmukh Khalsa, Grant Snitker, Scott Schwartz, Phredd Groves, Brenda Prehal, Joseph Sparaga, Holly Kiang (Cuny)

Aims and methods

The aim of the archaeological investigation is to further understand the archaeological remains through intrusive and non-intrusive methods.

A new topographic survey of the eroding mounds by the sea makes it possible to monitor the rate of erosion. The two mounds were therefore surveyed topographically, along with two farm mounds a little further inland. The investigation is primarily a rescue investigation and therefore the most vulnerable areas were targeted for trenching in order to obtain information otherwise threatened by erosion. These are the areas that are most affected by the marine erosion. The targets of the excavation included material for radiocarbon dating (C14), bones and material culture from the midden deposits seen in sections.

The excavation was carried out using the single context planning and recording system developed by MOLAS but adapted for Icelandic archaeology[5]. A machine was used to remove topsoil in trench 9 but apart from that, all trenches were hand dug. Contexts formed the main unit of recording and were excavated stratigrafically, in sequence, within excavation areas. All cultural deposits were sieved 100 % using a 4 mm size mesh. Each find, environmental sample and record is related to the unit that it was found within or taken from.

[5] Spencer 1994; Lucas 2003; http://instarch.is/utgafa.htm

Fieldwork results

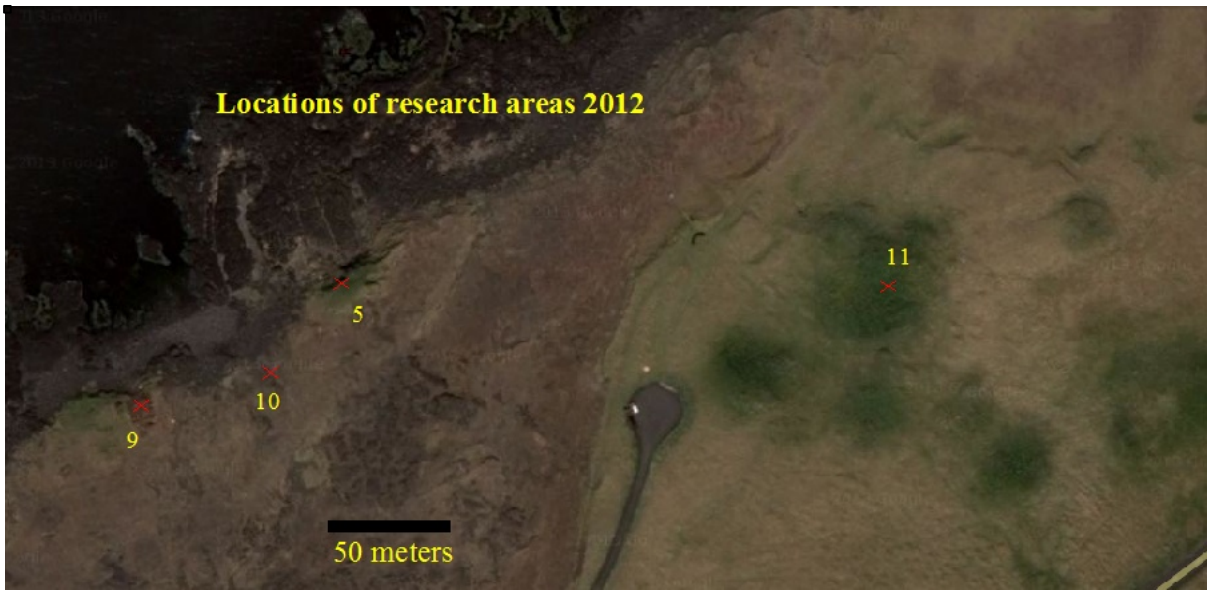


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Figure 3 Google Map with locations of trenches

Trench 5 64°54´06.81N 23°56´31.03W

Trench 5 is located on the highest mound and is made up of a thick stratified sequence of cultural deposits.

The excavation area is set in the steep northern slope of the mound. It was therefore decided to excavate it in steps for health and safety reasons. The soil is very sandy and gives way easily so the excavators had to manouvre carefully. This area has been heavily truncated by marine erosion and wind, and the bottom layers of the mound show severe erosion.

Figure 4 Tr. 5.

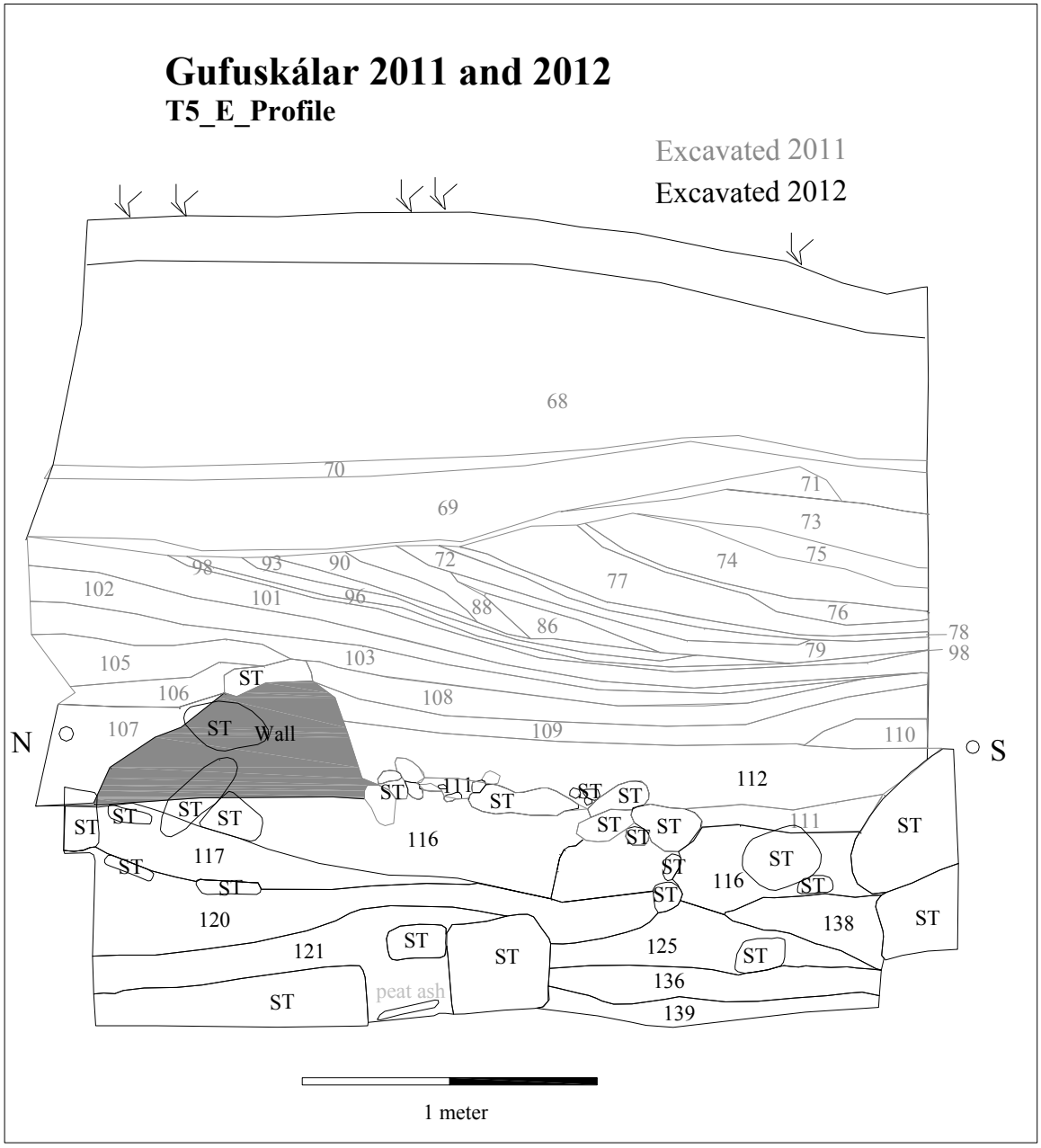


Figure 5 **Illustration of trench 5 section.**

		Contex register for profile		
68	2011	T5	Deposit	Possible trample
69	2011	T5	Deposit	windblown material
70	2011	T5	Deposit	midden deposit
71	2011	T5	Deposit	midden deposit with shell sand
72	2011	T5	Deposit	Midden deposit
73	2011	T5	Deposit	Midden deposit
74	2011	T5	Deposit	Midden
75	2011	T5	Deposit	Surface (root layer)
76	2011	T5	Deposit	aeolian sand
77	2011	T5	Deposit	midden deposit
78	2011	T5	Deposit	midden deposit
79	2011	T5	Deposit	Turfy
86	2011	T5	Deposit	Midden deposit
88	2011	T5	Deposit	Midden deposit
90	2011	T5	Deposit	midden deposit with a lot of bone
93	2011	T5	Deposit	midden deposit with burnt bone
96	2011	T5	Deposit	midden deposit with a lot of bones
98	2011	T5	Deposit	sandy aeolian deposit
101	2011	T5	Deposit	burnt bones, midden
102	2011	T5	Deposit	burnt bones, midden- more sandy than 101
103	2011	T5	Deposit	midden deposit, burnt bone
105	2011	T5	Deposit	midden deposit. Sandy with bone
106	2011	T5	Deposit	Black sand with midden
107	2011	T5	Deposit	Sandy deposit
108	2011	T5	Deposit	possible turf collapse
109	2011	T5	Deposit	midden deposit
110	2011	T5	Deposit	Turf, possible floor, charcoal rich
111	2011	T5	Deposit	peat ash, possible floor surface
112	2011	T5	Deposit	sandy, bone rich deposit
116	2012	T5	Deposit	Turfy dump-levelling layer
117	2012	T5	Deposit	Collapse with turf and stones
120	2012	T5	Deposit	Peat ash
121	2012	T5	Deposit	Turf collapse
125	2012	T5	Deposit	Silty sand with bone
136	2012	T5	Deposit	Midden, very dense with bone
138	2012	T5	Deposit	Sterile sand
139	2012	T5	Deposit	Windblown sand

Figure 6 **Context register for section**

Excavation continued where it had been left off in the previous year. After removing sandbags, stones and other material that was used to cover and support the exposed archaeology, the first deposit to be excavated was the turf wall left from 2011. The deposits in trench 5 consisted of midden deposits, structural features, collapsed features and aeolian sand. After episodes of midden deposits a stone construction (122) was uncovered. This was a small stone paved area with bounding stones of a peat ash deposit (120). It s most likely a large fireplace but only a part of it was visible as the deposits run into the section wall, out of the excavation area.

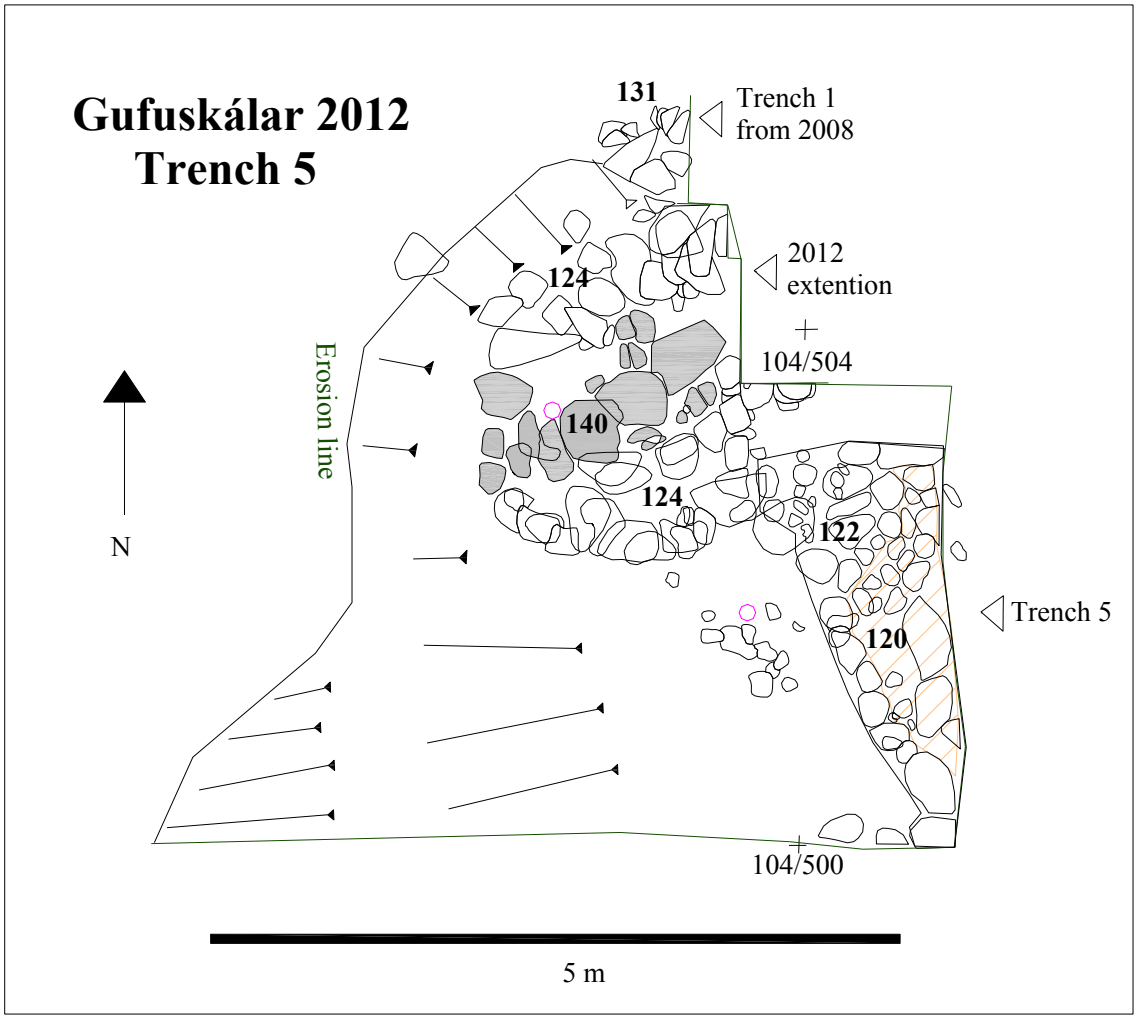


Figure 7 **Plan illustration of stone structures in trench 5.**

Stratigraphically below 120 and 122 was an entrance (124) into a building that was first noticed in an erosion scar in 2008 (section 1)[6]. The entrance is two meters long and has two sided stone walls on either side and a paved floor with associated floor deposits (140). It was only partially visible in trench 5 so a request to extend the trench by a meter north was made to the Archaeological heritage Agency which granted the extention. The entrance sits on a small eroding platform but the NW side of the structure is badly damaged due to erosion and so is the building it belongs to in trench 1.

[6] Lilja B. Pálsdóttir, 2009.

Figure 8 **Entrance 124 and associated building as seen in section.**

Both outer facing of stones in wall and the wall fill of the building have eroded away and so has the northern part of entrance. As can be seen on fig. 8 the remains of the wall building was already falling out in 2012. After removal of the entrance structure some midden deposits were excavated (132, 134, 136) as well as sand deposits (135, 138, 139). According to radiocarbon dating that was done on material from the 2008 investigation on section 1, the building with its entrance is early-mid 15th century.[7]

Figure 9 **The entrance seen from above.**

[7] Suerc. 2011. SUERC-34608 (GU-24155)

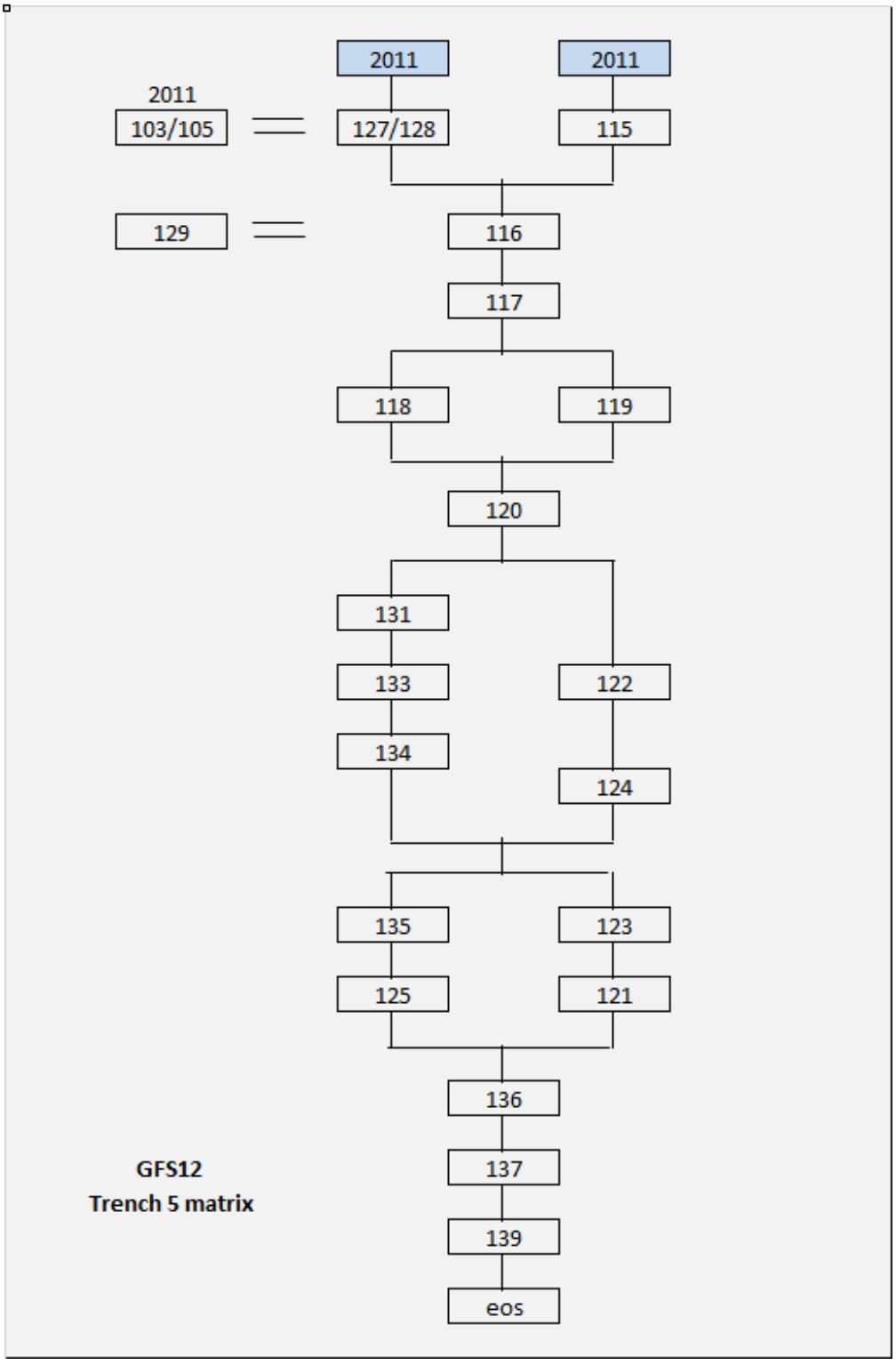


Figure 10Trench 5 matrix.

Trench 9 64°54´05.13N 23°56´37.51W

Figure 11 **Erosion scar from 2011. Structural stones from the fishing booth are visible in the section.**

Trench 9 is located directly above trench 6 which was excavated in 2011. Marine erosion has had the most impact in this area and cultural deposits as well as structural remains are visible in the truncation. Our topograhical surveys show that 2.46 meters have broken off the coastline in this area since 2008. It was therefore considered most important to put the focus on the structures still visible.

Figure 12 **Trench 9 before removal of turf. Sandbags supporting the section can be seen on the far left of the photograph.**

Figure 13 **Removal of topsoil.**

Figure 14**Trench 9 after first round of sand removal.**

An area of 10m by 10m around a eroding structure was opened up. It is connected to trench 6 as can be seen on fig. 16.

Apart from the turf on top and topsoil the structure was completely sunken in sand. Hardly any silt deposits were excavated during the removal of structural collapse and windblown sand. The very few were small patches of old surface, that had formed after the structure was abandoned, had become sunken in sand again and suffocated the vegetation leaving only thin patches of silt.

Figure 15 **Stone wall collapse in the building.**

Within the structure was over one meter of post-abandonment sand accumulation. After the sand had been removed some stone collapse was uncovered. The collapsed stones were mainly in the corridor although some were also recorded within the rooms. As can be seen on fig. 16 the rooms were given group numbers and those numbers will be referred to in this text.

The structure itself is made with stone and turf. The walls have two sides of round stones and between the rows of stones are very sandy turfs. The walls are filled with material from around the structure, including sand, silty turves and cultural deposits. There are signs of rebuild and repairs with blocked entrances, levelling deposits and added paving stones.

Phase 1

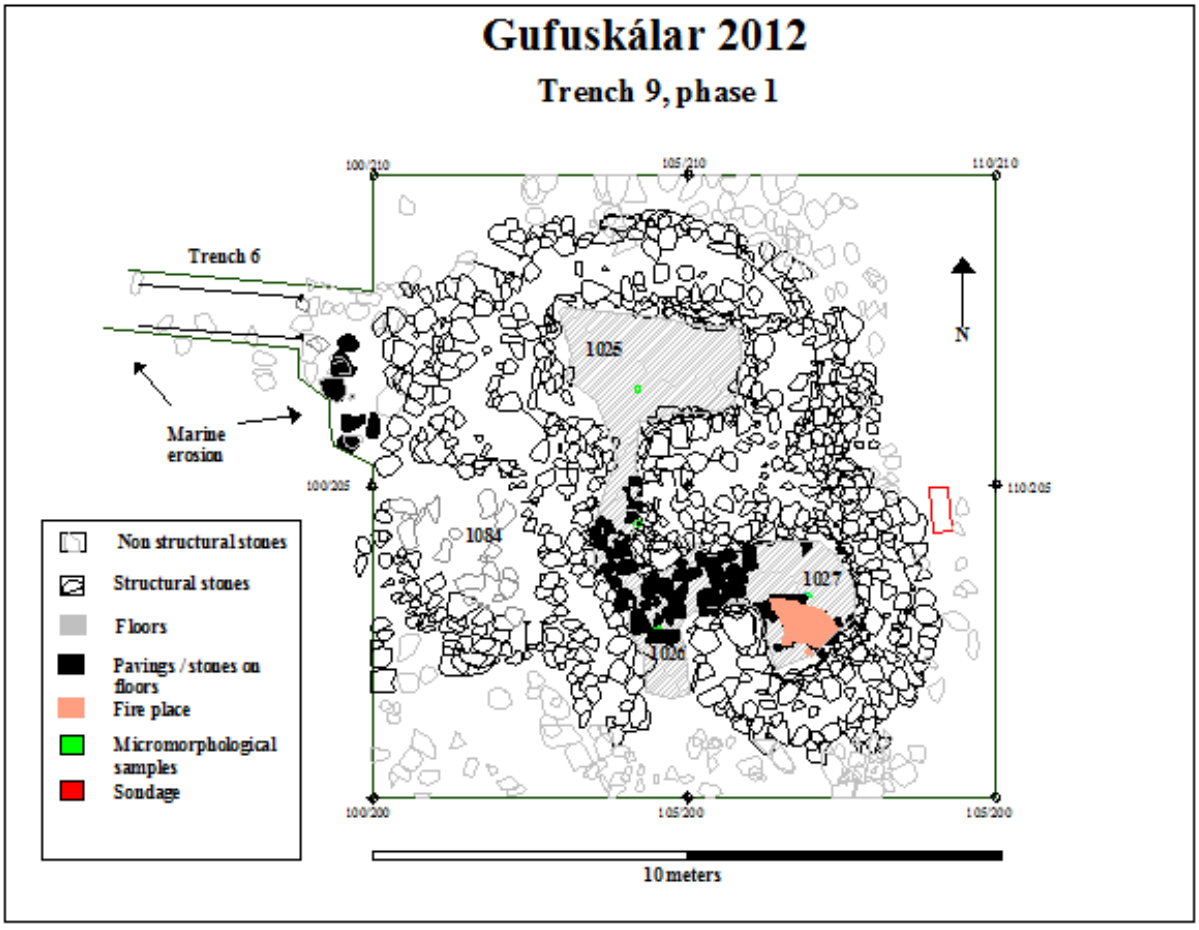


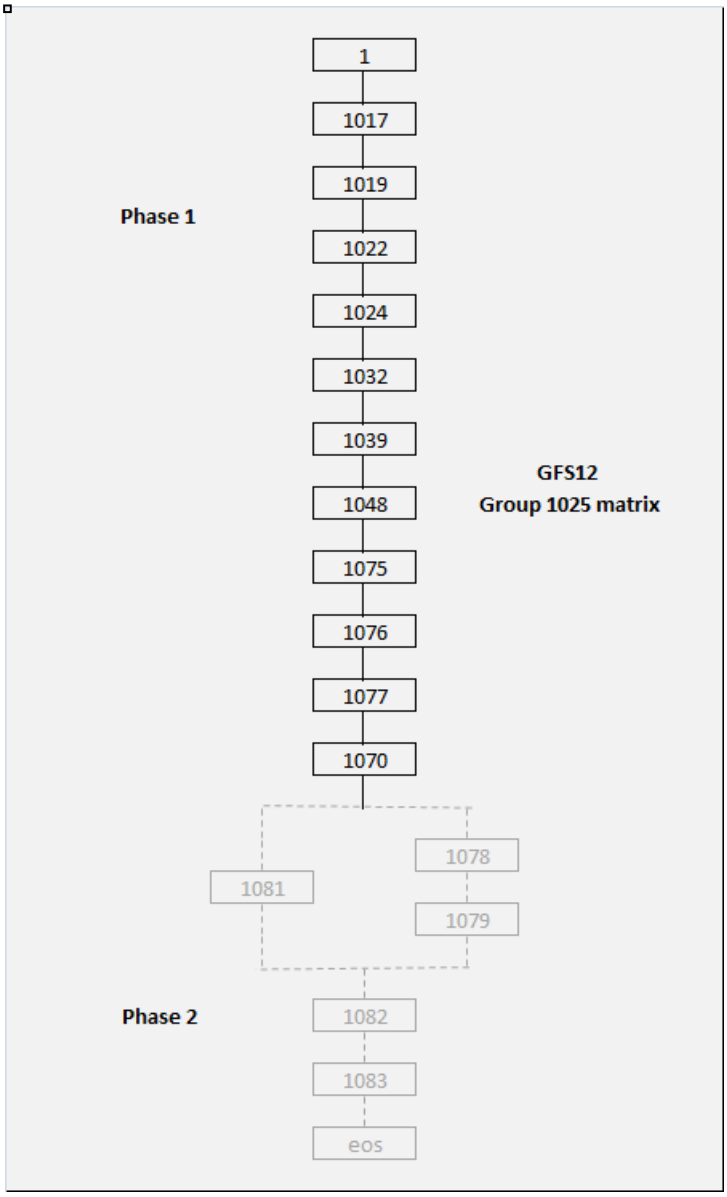
Figure 16 **The illustration shows the last use (phase 1) of the building.**

Group 1025

Figure 17 **Room 1025 with wall collapse inside.**

This room is at the far end of the corridor. Over a meter of pure sand was removed until the wall collapse was reached. The room had thin trample deposits (1024,1032, 1039, 1048) which were interpreted as floor layers but with no structural features. Floor deposit 1048 was contemporary with 1024 excavated in the corridor. Micromorphological samples were taken from the floors which extended into the partially paved corridor. Deposits of sandy patches (1075-1077) were on top of a turfy levelling deposit (1070). This levelling marks the beginning of the last use of the building, phase 1.

Figure 18 Group matrix for room 1025



Group 1026

A corridor connects the two rooms of building with the entrance. It has gone though some changes through time where it very likely has been added to earlier. (see fig. 20) A paving (1060) with associated floors (1028, 1074) was found to be a part of this phase. Although the paving was mainly in front of room 1027 and running into it, it was also visible on the east side of the corridor running towards room 1025. The stones had become uneven and sunken in some areas due to the weight of later deposits. Underneath the stone paving (1060) a levelling deposit (1074) sealed an earlier pavement. This new paved surface with associated floor deposits was not excavated as it belongs to the next phase of the building. It will be excavated in 2013. Micromorphological samples were taken from floors in the corridor for later analyses.

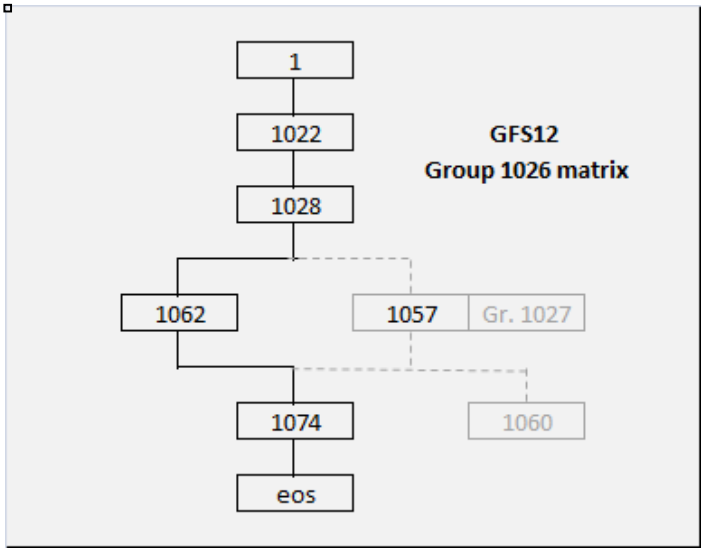


Figure 19 **Top. Pavement 1060 in the corridor. Sandy turfs are closer to the entrance.**

Figure 20 **Right. Blocked entrance in corridor.**

Figure 21. **Left. Group matrix for corridor**

Group 1027

This part of the building seems to have gone through the most changes of the so far excavated areas. Entrances have been blocked and opened, a wall repaired and rebuilt and pavement adjusted to the changes.

Context 1022 is primary wall collapse with associated sand infill between the stones. This deposit was below an extensive deposit of windblown sand 1019 which covered the entire inside of the building. As did deposit 1022. The first deposit contained within the walls of the eastern room (1027) was 1029, a very loose sand deposit up against the eastern wall. When another collapse episode (1037) had been removed the first occupation deposits were uncovered.

The northern wall (1086) of the room had been repaired and the entire facing of it rebuilt. The entrance to the room on the eastern side was blocked with stones but at the same time, a part of the western wall had been taken away to make a new entrance. The stones at the base now acted as a threshold, a step down into the room as could be seen by the floor deposits running from the corridor into the room.

Two trampled deposits with patches of peatash sealed a more substantial floor (1041). This floor deposit was very rich in charcoal. A fireplace (Group 1064) abutted this floor.

After these deposits had been excavated a new, compact floor was visible. This was left unexcavated as it is a part of another phase of the building, to be excavated in 2013.

Figure 22 Above. A former base of a wall was used as a step down into room 1027.

Figure 23 Left. Blocked entrance.

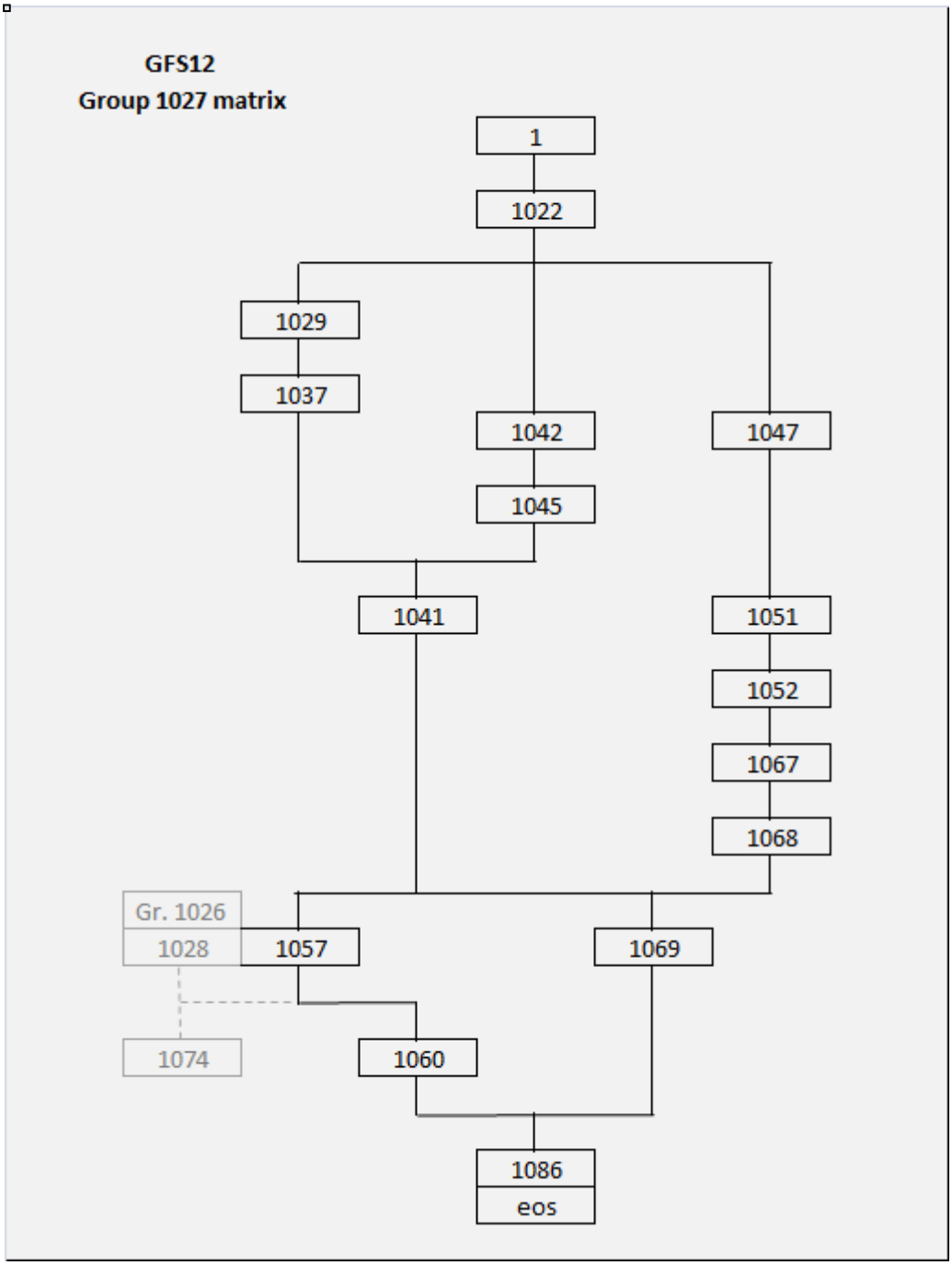


Figure 24 Group matrix for room.

Group 1064

This small fireplace in 1027 was very rich in charcoal as well as peatash. The deposits were in a cut (1068) which was lined with small stones (1067). Samples were taken for entomological, botanical and chemical analyses.

Figure 25 Above. Fireplace 1064.

Figure 26 Below. Section of the peatash deposit.

Group 1084

Figure 27 **The walls of room 1084 seen from the eroded section**

This group has been interpreted as a room as it seems to have walls all around. An entrance into it from the corridor (1026) has been blocked before the last occupationa phase (phase 1). Sofar only collapsed wall material, stones and turf debris mixed with windblown sand has been excavated. Claypipestems have been coming out of the collapsed material in this part but they have not been found within the building it self. This probably represents a later use of the abandoned building, a kind of a resting place where the ruin would provide some shelter from the wind. Excavation will continue in 2013.

Figure 28 **Left. Removal of collapsed stones.**

Figure 29 **Right. The room at the end of excavation in 2012, still full of collapsed material.**

Outside the building

Work did not only go on inside the building but also around it. Most of the work outside of the rooms went into removing the collapse from the building and determining what was collapse and what was in situ. Once the collapse (incl. 1016) had been taken away, trampled surfaces and midden material became visible in most areas. One area in particular was rich of artefacts. This is the southwest corner of the trench where midden deposits with pottery and iron fragments could be seen in the midden. Concentrations of artefacts were also detected around the main entrance of the building as well as the blocked entrance from room 1027 (see fig. 30 for artefact distribution). Finds on surface were recorded, collected and given the associated context number of the unexcavated deposit they came from.

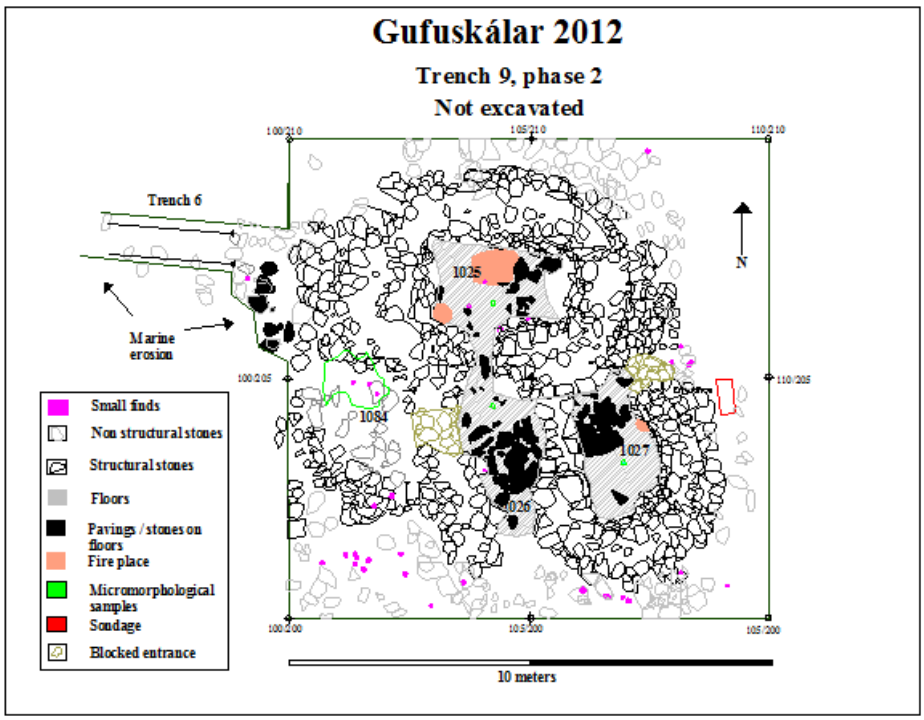


Figure 30 **Distribution of finds.**

Animal bones were found in almost all deposits. They are mostly fish bones but also sheep- and cattle bones. The bones are being analysed at Cuny and a report will be made on the results when the laboratory work is completed.

Figure 31 **In the eroding deposits of trench 6, below the building, this part of a skull was uncovered.**

Phase 2

As this phase has not yet been excavated the interpretations in this report might change as the work progresses. However, there are already some results on this phase as in room 1025 a sequence of floor deposit and a fireplace were excavated out of phase. These will be put into context with the remaining unexcavated deposits once they get worked on in the summer of 2013.

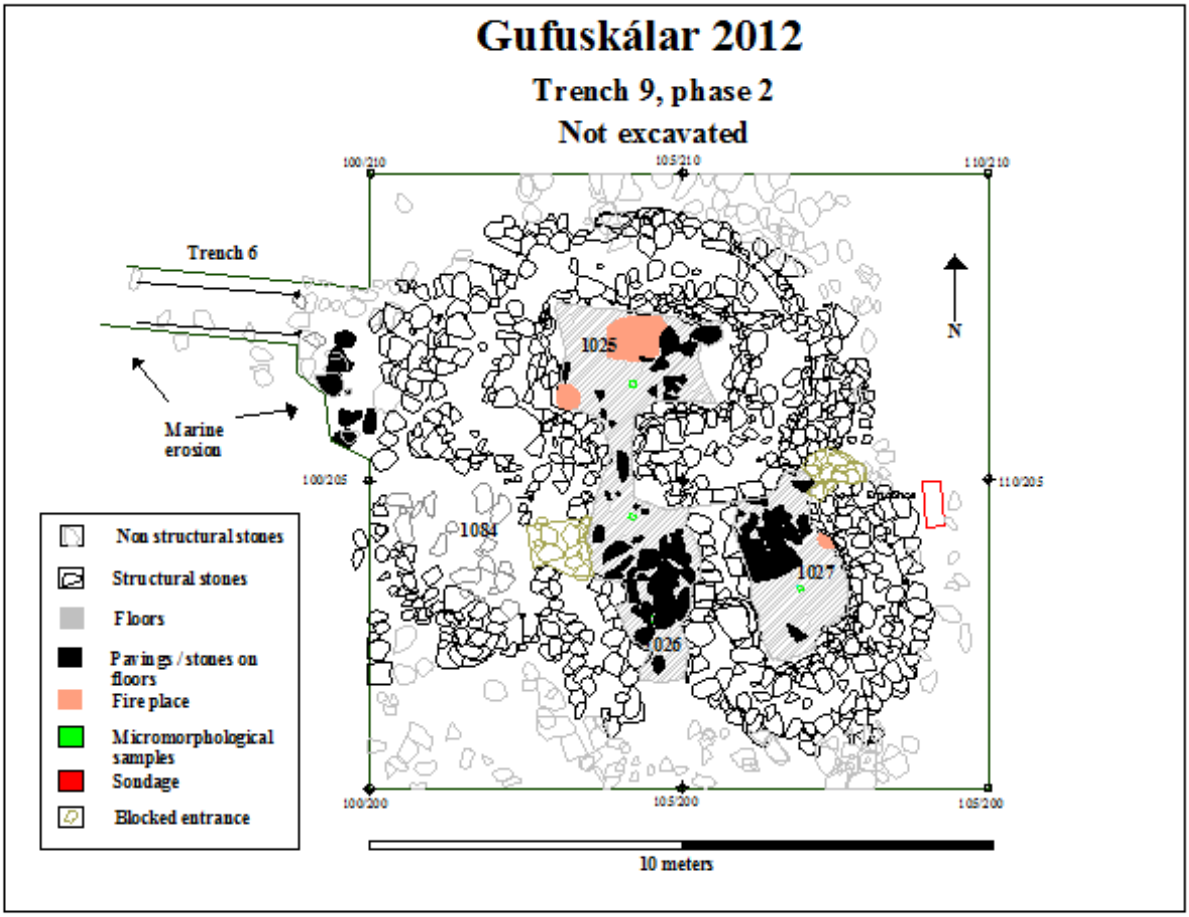


Figure 32 **Phase 2 of the building.**

Group 1025

Figure 33 **Pavement to the left in room, abutting the fireplace.**

A floor deposit (1081) was uncovered beneath a turfy levelling deposit (1070). It was more substantial than the previously recorded floor deposits in the room.

In the east end of the room, partially covering the floor, was a thick silty sand deposit. Two artefacts were retrieved, an iron hook with remains of a wooden handle and a poorly preserved whalebone.

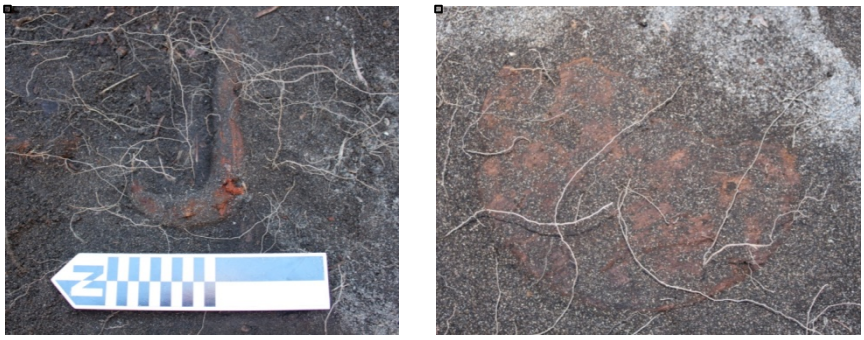


Figure 34**An iron hook and whalebone.**

The floor 1081 is partially paved with stone slabs which correspond to floors in the corridor (1026). A fireplace (gr.1080) is defined by a stone structure and has more than one episode of burning. It abuts 1081 as well as other floor deposits that remain unexcavated until 2013.This is probably the last major use of the the structure before it becomes used for shorter periods.

Group 1080 **Top of the wall continuing east**

This fireplace in room 1025 is defined by pavement and floor deposits all around. Stones have also been used to line the cut it seems to be sitting in. Peatash and charcoal (1078, 1079) have been used for burning and samples were taken for entomological, botanical and chemical analyses as well as a micromorphological sample.

Figure 35 **The fireplace during excavation.**

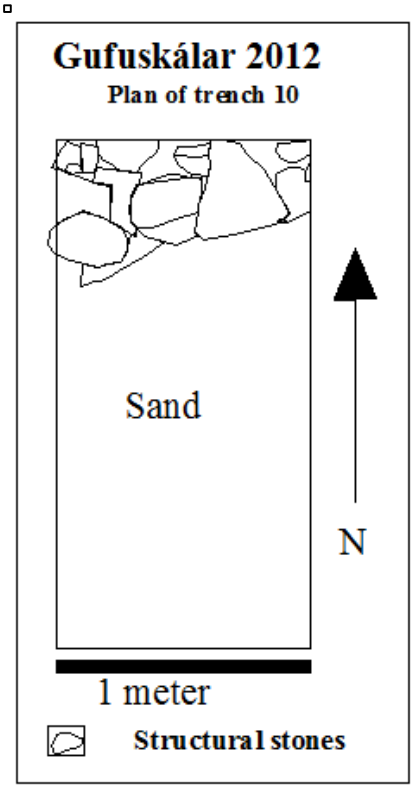
Trench 10 64°54´05.55N 23°56´33.48W

Figure 36 **The wall has survived in the sand.**

Trench 10 was a 2m by 1m dug into what appeared to be a structure eroding in the sand by the shore. It is located midway between the two mounds where trenches 5 and 9 are being excavated. Vegetation coverage is poor in this area due to the sand that dominates the soils here. This means that the surface is vulnerable to wind erosion and as a result the structure is becoming more clear each year.

The motives behind excavating the trench was to see if there were any floor deposits or other remains that could give indication to the function of the structure. But the main question was how the constant erosion had treated the structure and its possible deposits. Was there anything left?

Figure 37 **Location of trench 10 within the structure.**



It became clear very soon on that the structure had sunken in sand in the same way as the structure in trench 9. No cultural deposits were reached in the trench as the size of the 2m by 1m trench did not alow for more depth than a little over one meter. At 1,27m depth it was deemed unsafe to continue excavating. Only sand deposits had been removed up until then but all collapsed stones in the sand matrix were planned and recorded. The trench could not give any information on the use of the structure but at least it is now known that there is a large structure with high and wide walls buried in the sand.

Figure 38 **Above. Plan illustration of trench.**

Figure 39 **Right. Trench during excavation.**

Finds

In all, 540 finds numbers were given this season. Many of them are iron objects which are corroded nail fragments and rivets. No slag has so far been found in the trenches but it is most likely that a smithy is somewhere close to the fishing station, maybe even closer to the farm mounds. Fishing hooks are quite a frequent find as is to be expected on a fishing site as well as stone line sinkers and fish hammers. A few unfinished, broken ones were uncovered in midden deposits where they had been disposed of.

A whale vertebra <770> was found in trench 5 in a very fish bone rich deposit associated with fireplace 122 . It had been used as a chopping block but is otherwise in a very good condition.

Figure 40 A whale vertebra chopping block. Notice the marks on top.

Last season a small walrus ivory was recovered which appeared to be from the tusk root area. Saw marks on it indicate that walrus ivory was being processed at the site[8]. This season a small, perfect cubicle of walrus ivory was found in trench 5. It has no markings and the edges are very sharp. In late April, 2013 a comb fragment was found in a collapsed turf from section 1 amid fish bone and other midden material. It does not seem to be complete, its surface is very smooth and the edges are sharp. It was therefore probably discarded due to the breaking. It looks like walrus ivory but needs to be analysed further by a specialist.

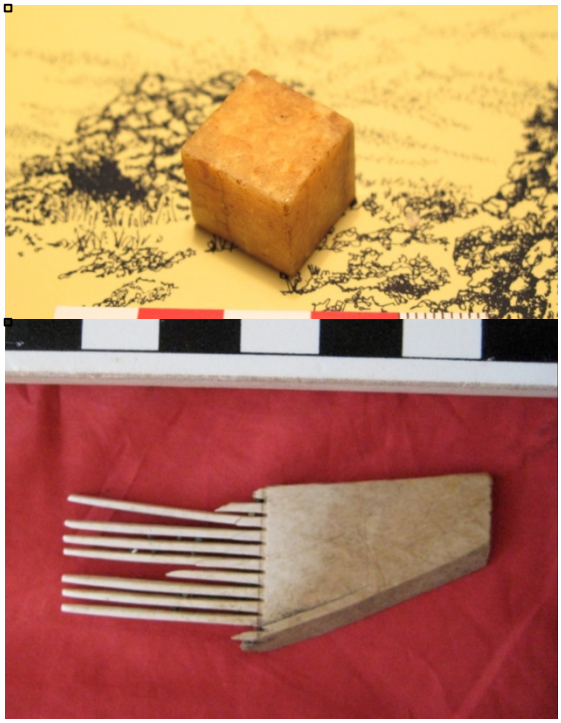


Figure 41 Walrus ivory Cubicle. A dice for a gaming board?

Figure 42 A comb fragment.

These later finds do seem to support the hypothesis that Gufuskálar were not only a place of fish catching and fish processing, but also a place where goods were made from expensive material.

[8] Personal communication, Thomas McGovern. 2011.

Trench 11 64°54´06.95N 23°56´13.29W

This trench is located on the east side of a farm mound. It was 1 m by 2 m. The aim was to gain information on whether the economy at Gufuskálar was based on farming or fishing and if there was a detectable change through time. 1 meter of windblown sand covered the cultural deposits. This thick accumulation of sand became evident during coring around the farm mound where it measured from 0.80m up to 1 m where thickest. The small size of the trench became a hindrance as the cultural deposits are quite deep. Even though the trench had to be abandoned due to safety issues, a section of the upper half of the mound was most interesting. It shows that the economy was mostly based on fishing even though there were periods when farming was intensified. [9] In order to fully understand how the site developed and when major changes occur, it is imperative to reach the earliest deposits, the beginning of what looks like a fishing based farm.

[9] Ian Simpson. 2012.

Figure 43 **Sandbagged and re-turfed for the winter.**

Leaving the site

In order to protect the building in trench 9 over winter, the outside of the building was filled up with sand and turf put on top. Inside the building sand was put on top of the deposits and sandbags used to support the walls. More effort was put on the eroded side where a mixture of sandbags, stones, turf and netting was used to support the fragile section. This was done with the help of a group of volunteers from the National Park to whom we owe a great deal of gratitude.

Figure 44 **Left. Eroded section covered at the end of season**

Figure 45 **Right. They helped with securing the building for the winter.**

Topographical survey and erosion issues

As all of the infield mounds and structures of the farm as well as the main research area by the coast were all surveyed in 2011 the main work now was on the erosion part of the project. The two mounds Tr, 5 and 9) by the coast were surveyed again for monitoring reasons. Erosion lines were also surveyed for the same purpose. The results on part of the research area can be seen on the map below.

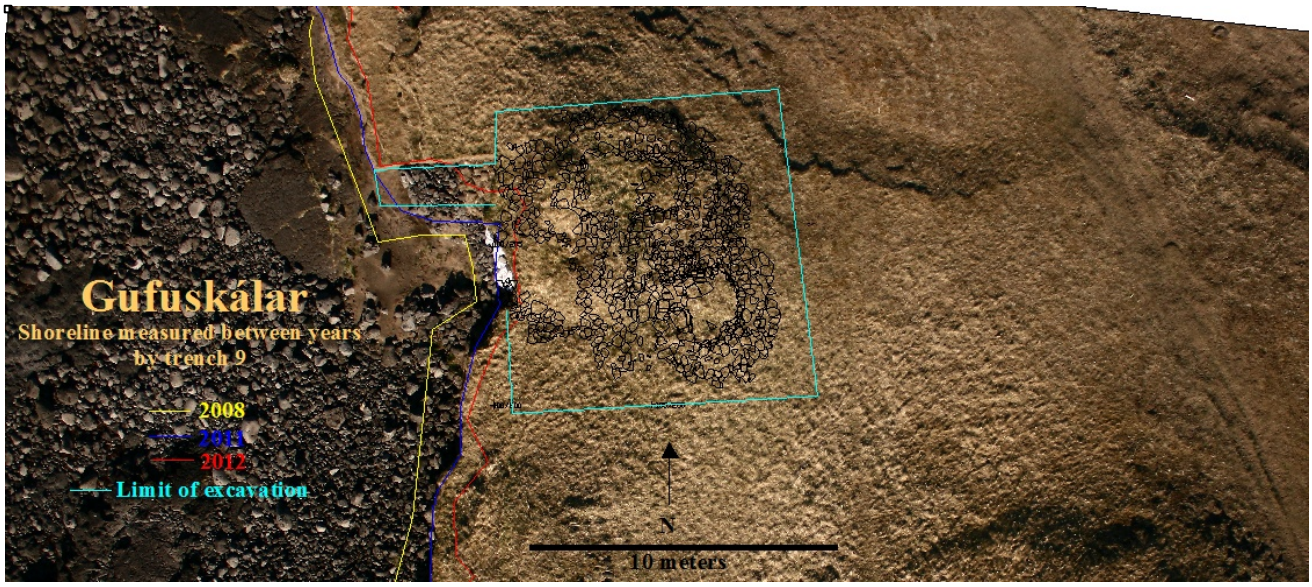


Figure 46 Shoreline surveys showing erosion rate between 2008 and late 2012. Underneath is a kite photograph taken in May 2012.

Erosion has been detected over all of the research area, wether it be caused by the wind or the sea. As can be seen on the photograph above, the loss of archaeological deposits is substantial since the first topographical survey was done in 2008 or up to 2.47 meters. The 2012 line was after a major storm in december that year. The affects of the storm on the archaeology was very much visible on both trench 5 and trench 9.

Figure 47 Trench 5. Photograph taken in january 2013. Sandbags are scattered around the area where the waves of sea retreated, taking the bags, turf and stones with them.

Figure 48 Trench 9. January 4th 2013. Most of the supporting stones and sandbags are now in a very defined pile below the structure.

For comparison are pictures taken at the end of season in early July and another in January 2013. Ca. 0.60m broke of the structure itself, mostly from the unexcavated western room 1084.

Figure 49 Right above. July 2012.

Figure 50. Right below. January 2013.

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Web links

http://instarch.is/utgafa.htm

Http://www.instarch.is/pdf/Archaeological%20Field%20Manual%20_3rd%20ed.pdf

Appendices

GFS12 Unit register				
Number	**Area /Trench**	**Type**	**Group**	**Description/Information**
1014	T9	DP		Sterile sand w/turf lenses
1016	T9	DP	G	All plans including Structural collapse
1017	T9	DP		Aeolian sand and wall collapse inside building
1018	T9/6	DP		Windblown sand w/midden
1019	T9	DP		Aeolian sand and stone collapse
1020	T9	DP		Collapse
1021	T9/6	DP		Dark coarse sand w/bone
1022	T9	DP	1025/1026	Stone collapse in building
1023	T9	DP		Midden in northwest exterior
1024	T9	DP	1025	Occup. Deposit in building
1025	T9	GR		Group nr. for N room in building
1026	T9	GR		Group nr. For corridor
1027	T9	GR		Group nr. For E room in building
1028	T9	DP		Occup. Deposit in corridor 1026 same as 1024. A-n side, B-s side
1029	T9	DP	1027	Sand dep. In E. Part of room 1027
1030	T9	DP		NW wall collapse in sandy dep.
1031	T9	DP		Dark midden w/charcoal NW
1032	T9	DP	1025	Occupat. Surface
1033	T6/9	DP		Structural collapse in T6
1034	T6/9	DP		Sandy midden in N exterior collapse
1035				Void
1036				Void
1037	T9	DP	1027	Turfy fill in between stones
1038	T9	DP		Silty sand w/bone
1039	T9	DP	1025	Occup. Layer
1040	T9	DP		Dark midden layer w/burnt bone
1041	T9	DP	1027	Floor
1042	T9	DP	1027	Floor/Trample deposit in west end of 1027
1043	T6/9	DP		Possible paving below 1038
1044	T9	DP		Turf layer up against east wall on the outside
1045	T9	DP	1027	Collapsed? Stones on top of drain ?
1046	T9	DP		Sand deposit on the south site
1047	T9	DP	1027	Sandy deposit + associated stone wall
1048	T9	DP	1025	Occupation deposit floor continues with 1028 in corridor
1049	T9	DP		Sandy deposit with midden material below 1042
1050	T9	DP		Sandy deposit with midden.

1051	T9	DP	1064	Fireplace, burnt bone.
1052	T9	DP	1064	Fireplace, burnt peat.
1053	T9	DP		Turf layer with sand
1054	T9	DP		Sand with turf and midden.
1055	T9			Void
1056	T9	DP		Structural collapse in 2011 T6
1057	T9	DP	1027	Stones (paving) in entrahce 1027
1058	T9	DP		Sand and turf agains east wall
1059	T9			Void
1060	T9	DP	1026	Pavement in corridor
1061	T9	DP		Sand layer, brown with dark lens.
1062	T9	DP	1026	Turf deposit at entrance of corridor
1063	T9	DP		Terf deposit among stones NW
1064	T9	GR		Group number for fireplace in room 1027
1065	T9	DP		Floor in room 1025
1066	T9	DP		
1067	T9	DP	1064	Stones around fireplace 1064
1068	T9	CT	1064	Cut of fireplace
1069	T9	DP	1027	Floor in room 1027
1070	T9	DP	1025	Levelling turf in room 1025/North part of corridoor
1071	T9	DP		Midden deposit with artifacts, burnt areas
1072	T9	DP		Sandy midden with burnt fuel/bones
1073	T9	DP		Turfy depoisit in N/NW corner
1074	T9	DP	1026	Sandy trample (? Layer in corridor)
1075	T9	DP	1025	Sand accumulation up against west w. In 1025
1076	T9	DP	1025	Sand accumulation up against west w. In 1025
1077	T9	DP	1025	Sand accumulation up against west w. In 1025
1078	T9	DP	1025	Charcoal mix in 1080
1079	T9	DP	1025	Peat ash in 1080
1080	T9	G	1025	For fireplace
1081	T9	DP	1025	Floor
1082	T9	DP	1025	Silty sand on east side of room
1083	T9	DP	1025	Sand on top of floor - taken together
1084	T9	GR		Group for western room
1085	T9	DP	1084	Turfy sand collapse containing burnt peat+bone
1086	T9	DP	1027	Northern wall in 1027
1087	T9	SECT		North west section of structure
115a	T5	DP		Another course for stones under 115 wall from 2011
116	T5	DP		Turfy dump seems to be loveling layer
117	T5	DP		Collapsed stone and possible structural stone + turf and turf collapse
117a	T5	DP		Additional stones from 117 w/in turf
118	T5	DP		Possible pit of fish bones

119	T5	DP		Alligned row of stones in south of TS
120	T5	DP		Peat ash dump/fireplace
122	T5	DP		Paving stones and bounding stones of 120
124	T5	DP		Paving stones to north of ts
124a	T5	DP		Collapsed stone around [124]
123	T5	DP		Acolian staile sand deposit
126	T5ext	DP		Dark midden = to 101-102 from 2011
127	T5ext	DP		Sandy midden layer = to 103+105 from 2011
128	T5ext	DP		Black sand = to [121]
129	T5ext	DP		Turf trample = to [116] from 2011
130	T5ext	DP		Turf layer = to [121]
121	T5ext	DP		Turf collapse layer
125	T5ext	DP		Silty sand w/bo....
124	T5ext	DP		Paving stones of [122] w/ext north trene. Added possible entryway
131	T5ext	DP		Wall stones to the north of the tr. 5 ext. associated w/ [124] paving
132	T5ext	DP		Dark sandy silt under paving stones
133	T5ext	DP		Paving stones under [131] [132]
134	T5ext	DP		Dark silty sand below [133]
135	T5ext	DP		Extremely staile sand layer
136	T5ext	DP		Midden layer very dense w/bone
137	T5ext	DP		2 Paving stones below [133] used to level surface?
138	T5	DP		Sand, sterile
139	T5	DP		Sand
140	T5	GR		Group nr. for paving in [124]

GFS12 Finds register					
No	**Area**	**Context**	**Material**	**Description/Information**	**Count**
650	T9	1024	PT	Redware no glaze	1
651	T9	1	FE	Fragment	1
652	T9	1020	PT	Redware	1
653	T9	1024	PT	Redware fragment	1
654	T9	1020	PT	Redware	1
655	T9	1	BN	Carved plug?	1
656	T9	1018	PT	Fragmented Redware with glaze	1
657	T9	1020	PT	Redware fragment	1
658	T9	1020	PT	Redware (small fragments)	6
659	T9	1020	PT	Redware fragment	1
660	T6/T9	Surface	BN	Unstratified carved bone (sheep/goat astragalus)	1

661	T9	1021	PT	Redware fragment	2
662	T9	1018	PT	Redware fragment	1
663	T6/T9	1020	PT	Redware fragment	1
664	T6/T9	1021	PT	Redware fragment	4
665	T9	1021	PT	Redware fragment	4
666	T9	1020	PT	Redware fragment	1
667	T9	1020	PT	Redware fragment	1
668	T9	1020	PT	Redware fragment	1
669	T9	1020	PUMICE	Pumice manuport	1
670	T9	1019	FE	Fe object	1
671	T9	1020	PT	Redware fragment	1
672	T9	1030	PUMICE	Object manuport	1
673	T9	1030	FE	Object	1
674	T9	1020	PUMICE	Object	1
675	T9	1023	CU ALLOY	Object	1
676	T9	1023	PT	Redware fragment	1
677	T9	Surface	FLINT	Flint fragment found near boat landing	1
678	T9	1020	PT	Redware fragment	1
679	T9	1020	FE	Object	1
680	T9	1020	PT	Redware fragment	1
681	T9	1030	PT	Redware fragment	1
682	T9	1020	PT	Redware fragment	1
683	T9	1020	PT	Redware fragment	1
684	T9	1030	PT	Redware fragment	1
685	T9	1030	PT	Redware fragment	1
686	T9	1023	PT	Redware fragment	1
687	T9	1023	PT	Redware fragment	1
688	T9	1023	PT	Redware fragment	1
689	T9	1023	PT	Redware fragment	1
690	T9	1023	PT	Redware fragment	1
691	T9	1020	ST	Manuport (gaming peace ?)	1
692	T9	1019	CU ALLOY	Object	1
693	T9	1020	FE	Object	1
694	T9	1030	CU ALLOY	Object	1
695	T9	1020	PT	Redware fragment	1
696	T9	1020	PT	Redware fragment	1
697	T9	1020	PT	Redware fragment	1
698	T9	1020	PT	Redware fragment	1
699	T9	1030	CU ALLOY	Wire fastener	1
700	T9	1030	CU ALLOY	Wire fastener	1
701	T9	1030	FE	Object	1
702	T9	1030	FE	Object	1
703	T9	1020	FE	Rove	1
704	T9	1018	PT	Redware fragment	1

705	T9	1030	FE	Object	1
706	T9	1018	PT	Redware fragment	1
707	T6/T9	1030	FE	Object	1
708	T9	1021	SCHIST	Whetstone	1
709	T9	1020	FE	Object	1
710	T9	1019	PT	Earthenware fragment	1
711	T9	1020	PT	Redware fragment	1
712	T9	1020	PT	Fragment	1
713	T6/T9	1023	FE	Object	1
714	T9	1021	PT	Redware fragment	1
715	T9	1023	FE	Object (X-Ray)	1
716	T9	1020	FE	Object	1
717	T6/T9	1023	FE	Object	1
718	T9	1021	PT	Redware fragment	1
719	T6/T9	1012	GLASS	Vessel fragment	1
720	T6/T9	1021	PT	Redware fragment	1
721	T6/T9	1021	PT	Redware fragment	1
722	T6/T9	1021	PT	Redware fragment	1
723	T9	1021	PT	Redware fragment	1
724	T9	1020	FE	Object	1
725	T6/T9	1020	FE	Object (X-Ray)	1
726	T9	1021	PT	Redware fragment	1
727	T9	1020	FE	Object	1
728	T9	1020	FE	Object (X-Ray)	1
729	T9	1023	FE	Object	1
730	T9	1020	PT	Redware burnt, broken	1
731	T9	1018	FE	Object	1
732	T9	1018	PT	Redware fragment, rim?	1
733	T6/T9	1020	WD	Fragment	1
734	T9	1021	PT	Redware fragment	1
735	T9	1023	CU ALLOY	Object	1
736	T9	1030	PT	Redware fragment	1
737	T9	1030	PT	Redware fragment	1
738	T9	1030	PT	Redware fragment	1
739	T9	1030	PT	Redware fragment	1
740	T9	1020	CU ALLOY	Nail ?	1
741	T9	1030	PT	Redware	1
742	T9	1023	CU ALLOY	Object	1
743	T9	1016	BN	Worked whalebone	1
744	T9	1030	CU ALLOY	Object	2
745	T9	1021	FE	Object	1
746	T9	1016	PT	Redware fragment	1
747	T9	1	FE	Object	1
748	T9	1021	PT	Large burnt redware, broken	2

749	T6/T9	1020	PT	Earthenware burnt	1
750	T9	1021	PT	Redware fragment	1
751	T9	1016	FE	Object	1
752	T9	1018	CU ALLOY	Object	2
753	T9	1030	FE	Object	1
754	T9	1030	CU ALLOY	Object	1
755	T9	1020	CU ALLOY	Object	1
756	T9	1028(A)	PUMICE	Object	1
757	T9	1	FLINT	Flake/Fragment	1
758	T9	1019	CU/FE	Object	1
759	T9	None	PUMICE	Object	1
760	T9	1020	FE	Object	1
761A	T6/T9	1016	CU ALLOY	Object	1
761B	T9	1018	PT	Redware fragment	1
762	T9	1020	PT	Redware fragment	2
763	T9	1018	PT	Redware fragment	1
764	T9	1018	PT	Redware fragment	1
765	T9	1018	PT	Redware fragment	1
766	T9	1018	PT	Redware fragment	1
767	T9	1018	PT	Redware fragment	1
768	T9	1018	PT	Redware fragment	1
769	T5	1018	PT	Redware fragment	1
770	T5	118	BN	Whalebone vertebrae/chopping block, broken	3
771	T5	120	FE/WD	Hammerhead	1
772	T5	123	PUMICE	Object	1
773	T5	120	ST	Lithic object	1
774	T5	120	BN/FE	Knife handle	1
775	T5	123	PB	Lead sinker	1
776	T5	123	Ivory	Cut cube (gaming piece?)	1
777	T5	116	CU ALLOY	Flake	1
778	T5	116	CU ALLOY	Plate w/rivet	1
779	T5	120	CU ALLOY	Object	1
780	T5	120	CU ALLOY	Object	1
781	T5	120	CU ALLOY	Nail	1
782	T5	121	CU ALLOY	Flake	1
783	T5	121	CU ALLOY	Object	1
784	T5	121	CU ALLOY	Tailings	
785	T5	123	CU ALLOY	Object	1
786	T5			Void	
787	T5	123	CU ALLOY	Object	1
788	T5	123	CU ALLOY	Object	1
789	T5	123	CU ALLOY	Object	1
790	T5	123	CU ALLOY	Object	1
791	T5	123	CU ALLOY	Rivet	1

792	T5	126	CU ALLOY	Rivet	1
793	T5	125	CU ALLOY	Object	1
794	T5	126	JASPER	Flake	1
795	T5	126	JASPER	Flake	1
796	T5	126	JASPER	Flake	1
797	T5	126	JASPER	Flake	1
798	T5	126	JASPER	Flake	1
799	T5	126	JASPER	Flake	1
800	T5	126	JASPER	Flake	1
801	T5	126	JASPER	Flake	1
802	T5	126	JASPER	Flake	1
803	T5	116	GLASS	Fragment	1
804	T5	130	GLASS	Fragment	2
805	T5	Unstrat	PT	Redware fragment	1
806	T5	116	PT	Redware pot leg, broken	4
807	T5	116	PT	Redware fragment	1
808	T5	120	PT	Salt glazed green fragment	1
809	T5	123	PT	Redware fragment	1
810	T5	123	PT	White earthenware fragment	1
811	T5	126	PT	Redware fragment	1
812	T5	126	PT	Redware fragment	1
813	T5	126	PT	Redware fragment	1
814	T5	126	PT	Blackware fragment	1
815	T5	126	PT	Blackware fragment	1
816	T5	126	PT	Redware fragment	1
817	T5	126	PT	Redware fragment	1
818	T5	130	ST	Manuport	1
819	T5	129	ST	Manuport	7
820	T5	123	ST	Manuport	1
821	T5	123	ST	Manuport	1
822	T5	127	ST	Interesting stones	2
823	T5	129	ST	Manuport	22
824	T5	116	ST	Manuport	4
825	T5	123	ST	Manuport	1
826	T5	120	ST	Manuport	1
827	T5	117	FE	Hook associated with whale verterbrae(770) broken	4
828	T5	130	FE	Object (sinker ?)	1
829	T5	123	FE	Object	1
830	T5	120	FE	Rivet	1
831	T5	120	FE	Object (X-Ray)	1
832	T5	116	FE	Object	1
833	T5	127	FE	Object	1
834	T5	126	FE	Rivet	1
835	T5	120	FE	Object	1

836	T5	126	FE	Object	1
837	T5	116	FE	Object	1
838	T5	116	FE	Rivet	1
839	T5	129	FE	Object	1
840	T5	121	FE	Object	1
841	T5	116	FE	Object	1
842	T5	120	FE	Object	1
843	T5	129	FE	Object	1
844	T5	120	FE	Object	1
845	T5	116	FE	Object	1
846	T5	117	FE	Object	1
847	T5	116	FE	Object	1
848	T5	120	FE	Object	1
849	T5	123	FE	Object	1
850	T5	116	FE	Object	1
851	T5	121	FE	Fish hook	1
852	T5	116	FE	Object	1
853	T5	126	FE	Object	1
854	T5	123	FE	Object	1
855	T5	116	FE	Fish hook	1
856	T5	118	FE	Nail	1
857	T5	126	FE	Object	1
858	T5	123	FE	Object	1
859	T5	120	FE	Object	1
860	T5	123	FE	Object/Rivet	1
861	T5	118	FE	Object	1
862	T5	120	FE	Object	1
863	T5	120	FE	Object	1
864	T5	128	FE	Object	1
865	T5	116	FE	Object	1
866	T5	120	FE	Object	1
867	T5	123	FE	Object	1
868	T5	126	FE	Object	1
869	T5	129	FE	Object	1
870	T5	123	FE	Object	1
871	T5	116	FE	Object	1
872	T5	116	FE	Object	1
873	T5	116	FE	Object	1
874	T5	116	FE	Rivet	1
875	T5	125	FE	Object	1
876	T5	123	FE	Rivet	1
877	T5	116	FE	Object	1
878	T5	126	FE	Object	1
879	T5	129	FE	Object	1

880	T5	129	FE	Object	1
881	T5	116	ST	Line sinker	1
882	T5	120	ST	Interesting rock	1
883	T5	120	ST	Line sinker found with 885	1
884	T5	116	ST	Line sinker	1
885	T9	120	ST	Line sinker found with 883	1
886	T9	Unstrat	ST	Line sinker	1
887	T9	1016	ST	Line sinker in progress	1
888	T9	1020	FE	Object	1
889	T9	1020	FE	Object	1
890	T9	1020	FE	Object	1
891	T9	1020	FE	Object	1
892	T9	1030	FE	Object	1
893	T6/T9	1020	FE	Object	1
894	T9	1021	FE	Object	1
895	T6/T9	1019	FE	Object	1
896	T6/T9	1018	FE	Object	1
897	T9	1021	FE	Object	1
898	T6/T9	1020	FE	Object	1
899	T9	1018	FE	Object	1
900	T9	1030	FE	Object	1
901	T9	1019	FE	Object	1
902	T9	1020	FE	Object	1
903	T9	1020	FE	Object	1
904	T6/T9	1030	FE	Object	1
905	T9	1021	FE	Object	1
906	T9	1020	FE	Object	1
907	T9	1020	FE	Object	1
908	T6/T9	1020	FE	Object	1
909	T9	1021	FE	Object	1
910	T6/T9	1030	FE	Object	1
911	T9	1018	CU ALLOY	Object	1
912	T9	1020	FE	Object	1
913	T9	1020	FE	Object	1
914	T9	1020	FE	Object	1
915	T9	1019	FE	Object	1
916	T6/T9	1020	FE	Object	1
917	T6/T9	1018	FE	Object	1
918	T6/T9	1021	FE	Object	1
919	T6/T9	1021	FE	Object	1
920	T6/T9	1021	FE	Object	1
921	T9	1021	FE	Object	1
922	T9	1028	PT	Object	1
923	T9	1038	FE	Object	1

924	T9	1046	BN	Horn core	1
925	T9	1046	PT	Object	1
926	T9	1046	FLINT	Object	1
927	T9	1050	FE	Object	1
928	T9	1048	CU	Nail	1
929	T9	1056	CU ALLOY	Key? (In situ)	1
930	T9	1053	CU ALLOY	Object	1
931	T9	1060	PT	Ceramic	1
932	T9	1053	CU	Object	1
933	T9	1060	FE	Object	1
934	T9	1081	FE	Hook or bent nail ?	1
935	T9	1046	PB	Pendant / Seal	1
936	T5	133	ST/FE	Pavement w/corroded nail	1
937	T5	132	FE	Rivet	1
938	T5	125	CU ALLOY	Object	1
939	T5	125	CU ALLOY	Object	1
940	T5	125	CU ALLOY	Rivet	1
941	T5	125	CU ALLOY	Object	1
942	T5	132	PT	Fragment	1
943	T5	132	ST	Schist fragment	1
944	T5	132	PT	Fragment	1
945	T5	125	PT	Fragment	1
946	T5	125	PT	Fragment	1
947	T5	125	CU ALLOY	Fragment	1
948	T5	125	CU ALLOY	Fragment	1
949	T5	125	CU ALLOY	Fragment	1
950	T5	125	CU ALLOY	Fragment	1
951	T5	125	CU ALLOY	Object	1
952	T5	125	CU ALLOY	Object	1
953	T5	132	CU ALLOY	Object	1
954	T5	132	CU ALLOY	Fragment	1
955	T5	132	CU ALLOY	Object	1
956	T5	125	CU ALLOY	Nail	1
957	T5	125	ST	Object	1
958	T5	125	FLINT	Flint object	1
959	T5	125	BN	Gaming piece	1
960	T5	125	BN	Gaming piece	1
961	T5	125	CU ALLOY	Fragment	1
962	T5	134	FE	Object	1
963	T5	125	FE	Nail	1
964	T5	125	FE	Object	1
965	T5	125	FE	Object	1
966	T5	125	WALRUS BONE ?	Object, sawn?	1
967	T5	125	CU ALLOY	Object	1

968	T9	125	ST	Manuport	1
969	T9	1046	ST	Pumice	1
970	T9	1048	FE	Object	1
971	T9	1034	FE	Object	1
972	T9	1048	FE	Object/Nail	1
973	T9	1056	PT	Fragment	1
974	T9	1070	FE	Object	1
975	T9	1073	CU ALLOY	Object	1
976	T9	1070	Fe	Object	1
977	T9	1074	PT	Fragment. Green glaze, yellow paste	1
978	T9	1070	FE	Object	1
979	T9	1070	FE	Object	1
980	T9	1070	FE	Object	1
981	T9	1070	CU ALLOY	Object	1
982	T9	1056	CU ALLOY	Object	1
983	T9	1070	FE	Object	1
984	T9	1040	PT	Fragment	1
985	T9	1046	PT	Fragment	1
986	T9	Unstrat	CU ALLOY	Object	1
987	T7	1074	FE	Object	1
988	T9	Unstrat/ surface	CU ALLOY	Pin	1
989	T9	1046	PT	Fragment	1
990	T9	1032	CU ALLOY	Nail	1
991	T9	1016	FE	Object, rove?	1
992	T9	1046	FE	Object	1
993	Unstrat	1046	PUMICE	Pumice	1
994	T9		CU ALLOY	Object	1
995	T9	1036	FE	Object	1
996	T9	1036	CU ALLOY	Object	1
997	T9	1028	FE	Object	1
998	T9	1046	PT	Fragment	1
999	T9	1036	FE	Object	1
1000	T9	1048	FE	Object	1
1001	T9	1082	WD	Barrel lid or base ?	1
1002	T9	1082	FE+WD	Fe hook with wooden handle	1
1003A	T9	1026	BN	Worked bone, needle in n part next to blocked entrance	1
1003B	T9	1085	FE	Fish hook	1
1004	T9	1085	ST	Quartz fragment ?	1
1005	T9	1085	ST	Quartz fragment	1
1006	T9	1085	CLAY	Pipe	1
1007	T9	1085	FE	Fish hook	1
1008	T9	1085	CU	Pin	1

1009	T9	1085	ST	Whetstone - not schist ?	1
1010	T9	1046	PT	Blackware glazed	1
1011	T9	1047	ST	Manuport	1
1012	T9	1034	PT	Redware glazed	1
1013	T9	1048	ST	Pumice ?	1
1014	T9	1046	ST	Man	2
1015	T9	1074	PT	Redware	1
1016	T9	1058	FE	Iron object	1
1017	T9	1046	FE	Object	1
1018	T9	1034	CU	Object	1
1019	T9	1046	PT	Redware fragment	1
1020	T9	1046	PT	Redware fragment	1
1021	T9	1046	PT	Redware fragment	1
1022	T9	1036	CU ALLOY	Flake	1
1023	T5	1028	PT	Redware fragment	1
1024	T5	136	FE	Fragment	1
1025	T5	135	FE	Fragment	1
1026	T5	136	BN	Whale bone, worked	1
1027	T5	136	FE	Object	1
1028	T5	136	ST	Pumice	1
1029	T5	136	BN	Worked bone fragment	1
1030	T5	136	BN	Worked bone fragment	1
1031	T9	136	CU ALLOY	Fragment	1
1032	T9	1046	FE	Object	1
1033	T9	1046	PT	Fragment	1
1034	T9	1046	CU ALLOY	Fragment	1
1035	T9	1028A	FE	Object	1
1036	T9	1038	CU ALLOY	Object	1
1037	T9	1034	PT	Fragment	1
1038	T9	1034	CU ALLOY	Fragment	1
1039	T9	1056	FE	Object	1
1040	T9	Unstrat	CLAY	Pipe stem from post abandonment layer	2
1041	T9	1062	ST	Manuport	1
1042	T9	1034	ST	Pumice	1
1043	T9	1034	ST	Manuport	1
1044	T9	1016	FE	Object (1016 north)	1
1045	T9	1016	FE	Object	1
1046	T5	1056	CU ALLOY	Object	1
1047	T9	136	BN	Carved bone	1
1048	T9	1046	FE	Object	1
1049	T9	1048	ST	Pumice	1
1050	T9	1038	CU ALLOY	Object	1
1051	T9	1034	FE	Object	1
1052	T9	1016	CU ALLOY	Object	1

1053	T9	1048	FE	Object	1
1054	T9	1034	PT	Fragment	1
1055	T9	1046	FE	Object	1
1056	T9	1044	FE	Object	1
1057	T9	1048	FE	Object	1
1058	T9	1038	FE	Rivet	1
1059	T9	1070	FE	Object	1
1060	T9	1049	FE	Object	1
1061	T9	1037	FE	Object	1
1062	T9	1016	FE	Object	1
1063	T5	1046	ST	Pumice	1
1064	Surface	136	BN	Worked whalebone	1
1065	Surface		CU ALLOY	Copper fragment	1
1066	Surface		BN	Worked whalebone	1
1067	T9		ST	Manuport	1
1068	T9	Unstrat	CU ALLOY	Object	1
1069	T5	1058	FE	Object	1
1070	T9	132	WD	Fragment	1
1071		1041	CU ALLOY	Object	1
1072	T9	Unstrat	FE	Object near trench 7	1
1073	T5	1020	FE	Object	1
1074	T5	136	CU ALLOY	Object	1
1075	T5	136	CU ALLOY	Object	1
1076	T5	136	FE	Object	1
1077	T5	116	BN	Carved bone	1
1078	T9	136	CU ALLOY	Object	1
1079	T5	1036	FE	Object	1
1080	T5	136	CU ALLOY	Object	1
1081	T5	136	PT	Fragment	1
1082	T5	136	CU ALLOY	Object	1
1083	T5	136	CU ALLOY	Object	1
1084	T5	136	BN	Worked bone	1
1085	T5	123	Shell	Worked shell	1
1086	T5	136	BN	Worked bone	1
1087	T5	136	BN	Worked bone	1
1088	T9	136	FE	Fish hook	1
1089	T5 Ext	1028A	FE	Object	1
1090	T5	130	WD	Fragment	1
1091	T5	116	WD	Fragment, large	1
1092	T9	135	FE	Knife blade, tang	1
1093	T9	1057	FE	Object	1
1094	T9	1036	ST	Pumice	3
1095	T9	1048	WD	Fragment	1
1096	T5	1070	ST	Pumice	1

1097	T5	125	ST	Pumice	1
1098	T9	136	ST	Manuport	15
1099	T9	1034	ST	Manuport	1
1100	T9	1034	ST	Pumice	1
1101	T9	1028B	FE	Object	1
1102	T9	1048	ST	Pumice	1
1103	T9	1053	ST	Manuport	1
1104	T9	1050	ST	Manuport	1
1105	T9	1050	ST	Manuport	1
1106	T9	1048	ST	Manuport	1
1107	T9	1048	FE	Object	1
1108	T9	1075	CU ALLOY	Fragment	1
1109	T9	1034	ST	Manuport	1
1110	Farm mound	1044	Textile	Undeterminate	1
1111	T9		Glass	Unstratified fragment	1
1112	T9	1070	FE	Object	1
1113	T9	1073	ST	Pumice	1
1114	T9	1061	PT	Fragment	1
1115	T9	1061	FE	Object	1
1116	T9	1061	FE	Object	1
1117	T9	1071	ST	Flint	1
1118	T9	1061	FE	Object	1
1119	T9	1061	CU ALLOY	Pin	1
1120	T9	1061	CU ALLOY	Fragment	1
1121	T9	1065	FE	Object	1
1122	T9	1061	FE	Object	1
1123	T9	1071	FE	Object	1
1124	T9	1061	CU ALLOY	Fragment	1
1125	T9	1065	ST	Flint fragment	1
1126	T9	1061	CU ALLOY	Fragment	1
1127	T9	1061	ST	Flint	1
1128	T9	1066	ST	Flint fragment	1
1129	T9	1065	WD	Fragment	1
1130	T9	1082	ST	Worked stone ?	1
1131	T9	1065	FE	Object	1
1132	T9	1070	FE	Object	1
1133	T9	1060	FE	Object	1
1134	T9	1034	PT	Fragment	1
1135	T9	1061	CU ALLOY	Fragment	1
1136	T9	1062	FE	Object	1
1137	T9	1060	Schist	Fragment	1
1138	T9	1060	CU ALLOY	Fragment	1
1139	T9	1061	FE	Object	1
1140	T9	1065	FE	Object	1

1141	T9	1081	FE	Nails	2
1142	T9	Unstrat	CLAY	Pipe fragment	3
1143	T9	1086	CU ALLOY	Fragment	1
1144	T9	1085	FE	Object	1
1145	T9	1085	ST	Quartz	1
1146	T9	1082	FE	Object	1
1147	T9	1085	Glass	Fragment	1
1148	T9	1016	FE	Nails	2
1149	T9	1081	WD	Object	1
1150	Farm mound	1069	FE	Object	2
1151	T5		FE	Object	6
1152	T9	136	ST	Manuport	23
1153	T9	1036	CU ALLOY	Flakes	1
1154	T9	1020	FE	Objects	6
1155	T9	1085	FE	Object	1
1156	T9	1085	FE	Objects	2
1157	T9	1069	ST	Pumice	2
1158	T9	1085	CU ALLOY	Object	1
1159	T9	1085	FE	Object	1
1160	T9	1085	ST	Manuports	2
1161	T9	1082	FE	Object	1
1162	T9	1085	CU ALLOY	Object	1
1163	T9	1069	CU ALLOY	Object	1
1164	T9	1069	FE	Object	1
1165	T9	1081	FE	Object	2
1166	T9	1069	CU ALLOY	Object	1
1167	T9	1085	CU ALLOY	Object	1
1168	T9	1085	FE	Object	1
1169	T9	1085	FE	Object	1
1170	T5	1071	ST	Pumice	1
1171	T5	136	BN	Worked bone (whale)	1
1172	T5	125	FE	Object (X-Ray)	1
1173	T9	125	FE	Object (X-Ray)	1
1174		1016	CU ALLOY	Decorative	1

GFS12 Photo register				
Frame	**Area**	**Context**	**Direction of Camera**	**Motive Description/Information**
8571	T9/T 6		E	Record all structure/midden + collapse after removing sandbags and light clean
8572	T9/T 6		E	Record all structure/midden + collapse after removing sandbags and light clean

8573	T9/T 6		E	Record all structure/midden + collapse after removing sandbags and light clean
8574	T9/T 6		E	Record all structure/midden + collapse after removing sandbags and light clean
8575	T9/T 6		E	Record all structure/midden + collapse after removing sandbags and light clean
8576	T9/T 6		E	Record all structure/midden + collapse after removing sandbags and light clean
8577	T9/T 6		E	Record all structure/midden + collapse after removing sandbags and light clean
8578	T9/T 6		E	Record all structure/midden + collapse after removing sandbags and light clean
8579	T9	1016	W	Collapse of east + south wall
8580	T9	1016	S	Collapse of east + south wall
8581	T9	1016	W	Collapsed stones from structure
8582	T9	1016	W	Collapsed stones from structure
8583	T9	1016	N	Collapsed stones from structure
8584	T9	1016	N	Collapsed stones from structure
8585	T9/T 6	1016	E	Day 1 reopen trench
8586	T9/T 6	1016		T6 from 2011
8587	T9/T 6	1016	N	Views N+NE of trench 6 + trench 9 connecting
8588	T9/T 6	1016	N	Views N+NE of trench 6 + trench 9 connecting
8589	T9/T 6	1016	N	Views N+NE of trench 6 + trench 9 connecting
8590	T9/T 6	1016	N	Views N+NE of trench 6 + trench 9 connecting
8591	T9/T 6	1016	N	Views N+NE of trench 6 + trench 9 connecting
8592	T9/T 6	1016	N	Views N+NE of trench 6 + trench 9 connecting
8593	T9/T 6	1016	N	Views N+NE of trench 6 + trench 9 connecting
8594	T9/T 6	1016	E	Trench 6 clean + open
8595	T9/T 6	1016	E	Trench 6 clean + open
8596	T9/T 6	1016	E	Trench 6 clean + open
8597	T9/T 6	1016	E	Trench 6 clean + open
8598	T9/T 6	1018	SE	Connecting trench 9 + 6
8654	T9	1020	N	Collapsed stones from structure
8656	T9	1020	N	Collapsed stones from structure
8658	T9	1020	N	Collapsed stones from structure
8661	T9	1020	N	Collapsed stone

8662	T9	1020	N	Collapsed stone
8663	T9	1020	W	Collapsed stone
8669	T9	1020	N	Collapsed stone
8670	T9	1020	N	Collapsed stone
8671	T9	1016	N	Collapsed structural stone
8672	T9	1016	N	Collapsed structural stone
8673	T9	1016	S	Collapsed structural stone
8674	T9	1016	S	Collapsed structural stone
8675	T9	1016		Working shots
8676	T9	1016		Working shots
8677	T9	1016		Working shots
8678	T9	1016		Working shots
8679	T9	1016		Working shots
8680	T9	1016		Working shots
8681	T9	1016	W	Collapsed structural stone
8682	T9	1016	S	Collapsed structural stone
8683	T9	1016	SE	Collapsed structural stone
8684	T9	1016	S	Collapsed structural stone
8685	T9	1016	SE	Collapsed structural stone
8686				Finds photo of dice
8687				Finds photo of dice
8688				Finds photo of dice
8689				Finds photo of dice
8690				Finds photo of dice
8691	T9	1022		Stone collapse within building
8692	T9	1022		Stone collapse within building
8693	T9	1022		Stone collapse within building
8694	T9	1022		Stone collapse within building
8695	T9	1022		Stone collapse within building
8696	T9	1022		Stone collapse within building
8697	T9	1022		Stone collapse within building
8698	T9	1022		Stone collapse within building
8699	T9	1022		Stone collapse within building
8700	T9	1022		Stone collapse within building
8701	T9	1022		Stone collapse within building
8702	T9	1022		Stone collapse within building
8703	T9	1022		Stone collapse within building
8704	T9	1022		Stone collapse within building
8705	T9	1022		Stone collapse within building
8706	T9	1022		Stone collapse within building
8707	T9	1022		Stone collapse within building
8720	T9	1016	W	Southeast corner, stones from structural collapse
8721	T9	1016	W	Southeast corner, stones from structural collapse
8722	T9	1016	W	Southeast corner, stones from structural collapse

8723	T9	1016	N	Southeast corner, stones from structural collapse
8724	T9	1016	N	Southeast corner, stones from structural collapse
8725	T9	1016	N	Southeast corner, stones from structural collapse
8726	T9	1016	N	Southeast corner, stones from structural collapse
8727	T9	1016	W	SE collapse
8728	T9	1016	W	SE collapse
8729	T9	1016	W	SE collapse
8731	T9	1016	W	NE collapse
8732	T9	1016	W	NE collapse
8733	T9	1022	E	Coll. ST. In doorway second layer
8734	T9	1022	E	(1 m measure)
8735	T9	1022	W	(1 m measure)
8736	T9	1022	W	(1 m measure)
8737	T9	1022	W	(1 m measure)
8738	T9	1022	S	(1 m measure)
8746	T9	1022	N	Stones in lower part of corridoor
8749	T9	1022	N	Stones in lower part of corridoor
8759	T9	1026	W	Corridoor of structure
8760	T9	1027	S	E room
8761	T9	1025	S	N room
8762	T9	1025	S	N room
8763	T9	1025,6,7	N	View of rooms in whole structure
8766	T9	1025,6,7	N	View of rooms in whole structure
8775	T9	1016	W	Stone collapse, exterior
8776	T9	1016	S	Stone collapse, exterior
8778	T9	1016	N	Stone collapse, exterior
8779	T9	1016	N	Stone collapse, exterior
8780	T9	1016	N	Stone collapse, exterior
8782	T9	1030		Stones in context for 1030
8783	T9	1030		Stones in context for 1030
8784	T9	1030		Stones in context for 1030
8785	T9	1030		Stones in context for 1030
8786	T9	1030		Stones in context for 1030
8787	T9	1030		Stones in context for 1030
8788	T9	1016		Stones in wall, slumped forward
8789	T9	1016		Stones in wall, slumped forward
8790	T9	1016		Stones in wall, slumped forward
8796	T9	1030		Removal in progress
8797	T9	1030		Removal in progress
8798	T9	1030		Removal in progress
8801	T9	1040	W	Context photo
8802	T9	1040	W	Context photo
8803	T9			Working shots
8804	T9			Working shots

8805	T9			Working shots
8799	T9	Under 1033		Seal ? Mandible + maxilla in situ under stone
8800	T9	Under 1033		Seal ? Mandible + maxilla in situ under stone
8806	T9	1038	W	Removed to reveal levelled surface + possible paving stones
8807	T9	1038	W	Removed to reveal levelled surface + possible paving stones
8808	T9	1038	N	Removed to reveal levelled surface + possible paving stones
8809	T9	1044	S	Turf exterior
8810	T9	1044	S	Turf exterior
8811	T9	1045	E	Stone collapse ? Top of drain
8812	T9	1045	Above	Stone collapse ? Top of drain
8813	T9	1045	W	Stone collapse ? Top of drain
8814	T9	1046	E	Stone collapse + exposed
8815	T9	1046	E	Context 1046
8816	T9	1047	E	Stones + sandy deposit
8817	T9	1047	S	Stones + sandy deposit
8818	T9	1047	W	Stones + sandy deposit
8819	T9	1049		Stones + top of 1049
8820	T9	1049		Stones + top of 1049
8821	T9	1049		Stones + top of 1049
8822	T9	1048	S	Interior of North room potential paving stones into doorway
8823	T9	1048	S	Interior of North room potential paving stones into doorway
8824	T9	1048	S	Interior of North room potential paving stones into doorway
8825	T9	1048	S	Interior of North room potential paving stones into doorway
8826	T9	1048	N	Interior of North room potential paving stones into doorway
8827	T9	1048	S	Interior of North room potential paving stones into doorway
8828	T9	1051	S	Fireplace
8829	T9	1051	N	Fireplace
8830	T9	1051	S	Fireplace
8831	T9	1050	W	Burnt midden and clay
8832	T9	1050	S	Burnt midden and clay
8833	T9	1046	N	Articulated fish vert.
8834	T9	1052	S	Fireplace
8835	T9	1052	S	Fireplace
8836	T9	1046	E	Completed excavation of unit 1046
8837	T9	1046	W	Completed excavation of unit 1046
8838	T9	1053	W	Turf layer
8839	T9	1053	S	Turf layer
8840	T9	1052	S	Fireplace/peat ash

8841	T9	1052	S	Fireplace/peat ash
8842	T9	1052	S	Fireplace/peat ash
8843	T9	1052	S	Fireplace/peat ash
8844	T9	1052	E	Fireplace/peat ash
8845	T9	1052	E	Fireplace/peat ash
8846	T9	1052	E	Section of fireplace
8847	T9	1052	S	Fireplace/peat ash
8851	T9	1052	W	Fireplace/peat ash
8852	T9	1052	S	Fireplace/peat ash
8853	T9	1052	S	Fireplace/peat ash
8854	T9	1052	E	Fireplace/peat ash
8855	T9	1052	E	Fireplace/peat ash
8856	T9	1052	W	Fireplace/peat ash
8857	T9	1052	W	Fireplace/peat ash
8858	T9	1052	E	Section
8859	T9			Working shots
8860	T9			Working shots
8861	T9			Working shots
8862	T9			Working shots
8863	T9			Working shots
8864	T9			Working shots
8865	T9	1048	N	Occup. Dep/paving stones
8866	T9	1048	N	Occup. Dep/paving stones
8867	T9	1048	S	Occup. Dep/paving stones
8868	T9	1048	N	Occup. Dep/paving stones
8869	T9	1057	E	Paving st. In entrance 1027
8870	T9	1057	E	Paving st. In entrance 1027
8871	T9	1057	E	Paving st. In entrance 1027
8872	T9	1057	E	Paving st. In entrance 1027
8874	T9	1054	N	Midden
8875	T6/T9	1056	N	Tumble in 2011 T6
8876	T6/T9	1056	N	Tumble in 2011 T6
8877	T6/T9	1056	E	Tumble in 2011 T6
8878	T9	1058	S	Sand + turf against east wall
8879	T9	1058	S	Sand + turf against east wall
8880	T9	1058	W	Frank + Scott
8881	T6/T9	1056	W	Removal
8882	T6/T9	1056	S	Removal
8883	T6/T9	1056	S	Removal
8884	T6/T	1056	N	Removal

	9			
8912	T6/T 9	NW corner	W	Outl lying turf/rock structure
8913	T9	1073	W	1073 turf deposit with rock
8943	T9	1078	N	Fireplace half sectioned in room 1025
8944	T9	1078	N	Fireplace half sectioned in room 1025
8945	T9	1078	N	Fireplace half sectioned in room 1025
8946	T9	1078	E	Fireplace half sectioned in room 1025
8947	T9	1078	N	Fireplace half sectioned in room 1025
8948	T9	1078	N	Fireplace half sectioned in room 1025

GFS12 bone register								
No	**Area**	**Context**	**XL bag**	**L bag**	**M bag**	**S bag**	**XS bag**	**Description**
1000	T9	1014				1		
1001	T9	1016			1	25	1	
1002	T9	1017			2			
1003	T9/T6	1018		1	3			
1004	T9	1019		2	2	2		
1005	T9	1020	5	4		3	3	
1006	T9	1021		1	1			
1007	T9	1022		1	1			
1008	T9	1023	1	1				
1009	T9	1024		2				
1010	T9	1028A			2			
1011	T9	1029/1027			2			
1012	T9	1028B		1				
1013	T9	1030	1	3				
1014	T9	1031			1			
1015	T9	1032		1				
1016	T9	1034		5	1			
1017	T9	1037		2				
1018	T9	1038		1	1			
1019	T9	1040		1	1			
1020	T9	1041			1			
1021	T9	1042			1			
1022	T9	1028			2			
1023	T9	1039		1				
1024	T9	1044			2			
1025	T9	1045			1			
1026	T9	1046		3	1			

1027	T9	1047		1				
1028	T9	1048		1				
1029	T9	1049		1				
1030	T9	1050			1			
1031	T9	1051				1		
1032	T9	1053		1	1			
1033	T9	1054		1				
1034	T9/T6	1056			1			
1035	T9	1058			1	1		
1036	T9	1060		2				
1037	T9	1061		2	1			
1038	T9	1062			2			
1039	T9	1065		1		1		
1040	T9	1066			1	1		
1041	T9	1069			1			
1042	T9	1070		1	1	1		
1043	T9	1071				1		
1044	T9	1072			1			
1045	T9	1073			1			
1046	T9	1074		1	1			
1047	T9	1075		1				
1048	T9	1076			1			
1049	T9	1079				1		
1050	T9	1081		2				
1051	T9	1082		1				
1052	T9	1085			1			
1053	T9	Unstrat.			3	5	1	
1054	T9	Unstrat			1			ext. of structure
1055	T9	Unstrat.			1			Ext. NW exterior
1056		Unstrat.			1			
1057	T5	116		8	7	1		
1058	T5	117		2				
1059	T5	118		5				
1060	T5	120		4	2	1		
1061	T5	121		2	1			
1062	T5	123		11	2			
1063	T5	125	6	5	2			
1064	T5	126	2	4				
1065	T5	127		1				
1066	T5	128			1			
1067	T5	129		1	1			
1068	T5	130		4	1			
1069	T5	136	7	4	4			
1070	T5	132		4				

1071	T5	134			1			
1072	T5/1					1		Wall between T1 & T5. Radiocarbon C14
1073	T11				1			Horizon 12. Bones from farm mound trench
1074	T11			1				Horizon 2. Bones from farm mound trench

GFS12 Sample register					
No	**Area**	**Context**	**Vol**	**Quant bags/bucket**	**Description/information**
22	T9	1024	10 l	1	Botanical
23	T9	1024	s bag	1	Chemical
24	T9	1024	10 l	1	Entomological
25	T9	1024		2	Micromorphological
26	T9	1028	10 l	2	Botanical
27	T9	1028	s bag	2	Chemical
28	T9	1028	10 l	2	Entomological
29	T9	1028		4	Micromorphological
30	T9	1041	10 l	1	botanical
31	T9	1041	10 l	1	Entomological
32	T9	1041	s bag	1	Chemical
33	T9	1042	10 l	1	Entomological
34	T9	1042	10 l	1	Botanical
35	T9	1042	s bag	1	Chemical
36	T9	1051	10 l	1	Botanical
37	T9	1051	10 l	1	entomological
38	T9	1051	s bag	1	Chemical
39	T9	1048			Chemical
40	T9	1048			Botanical
41	T9	1048			Entomological
42	T9	1052	10 l	1	Botanical
43	T9	1052	5 l	1	Entomological
44	T9	1052	s bag	1	Chemical
45	T9	1065	10 l	1	Botanical
46	T9	1065	10 l	1	Entomological
47	T9	1065	s bag	1	Chemical
48	T9	1041/1069	Kubiena	1	Micromorphological
49	T9	1078	10 l	1	Botanical
50	T9	1079	10 l	1	Botanical
51	T9	1078	s bag	1	Chemical
52	T9	1079	m bag	1	Chemical

53	T9	1069	10 l	1	Botanical
54	T9	1069	10 l	1	Entomological
55	T9	1069	s bag	1	Chemical
1000	T5	134	Kubiena	1	Sample
1001	T5	1025	Kubiena	1	Sample
1002	T6/T9	1038	s bag	1	charcoal
1003	T5	1057	s bag	1	charcoal
1004	T5	116	m bag	1	charcoal
1005	T5	1049	s bag	1	charcoal
1006	T5	118	m bag	1	charcoal
1007	T5	116	s bag	1	charcoal
1008	T5	103	m bag	1	charcoal
1009	T5	118	m bag	1	charcoal
1010	T5	120	m bag	1	charcoal
1011	T5	120	m bag	1	charcoal
1012	T5	121	m bag	1	charcoal
1013	T5	124	m bag	1	Chemical
1014	T5	134	10 l	1	Botanical
1015	T5	134	10 l	1	Entomological
1016	T5	118	10 l	1	bulk soil sample
1017	T5	116	m bag	1	charcoal
1018	T5	116	s bag	1	charcoal

Radiocarbon dating

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RADIOCARBON DATING CERTIFICATE

8 June 2011

Laboratory Code	SUERC-34608 (GU-24155)
Submitter	Dr Thomas McGovern Hunter College Zooarchaeology Lab Anthropology 695 Park Ave New York, NY10065 USA
Site Reference	Gufuskalar (GFS08)
Sample Reference	GFS 007 OC
Material	Bone : Capine femora fragment
δ^{13}C relative to VPDB	-20.9 ‰
δ^{15}N relative to air	3.0 ‰
C/N ratio(Molar)	3.2
Radiocarbon Age BP	380 ± 30

N.B. 1. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

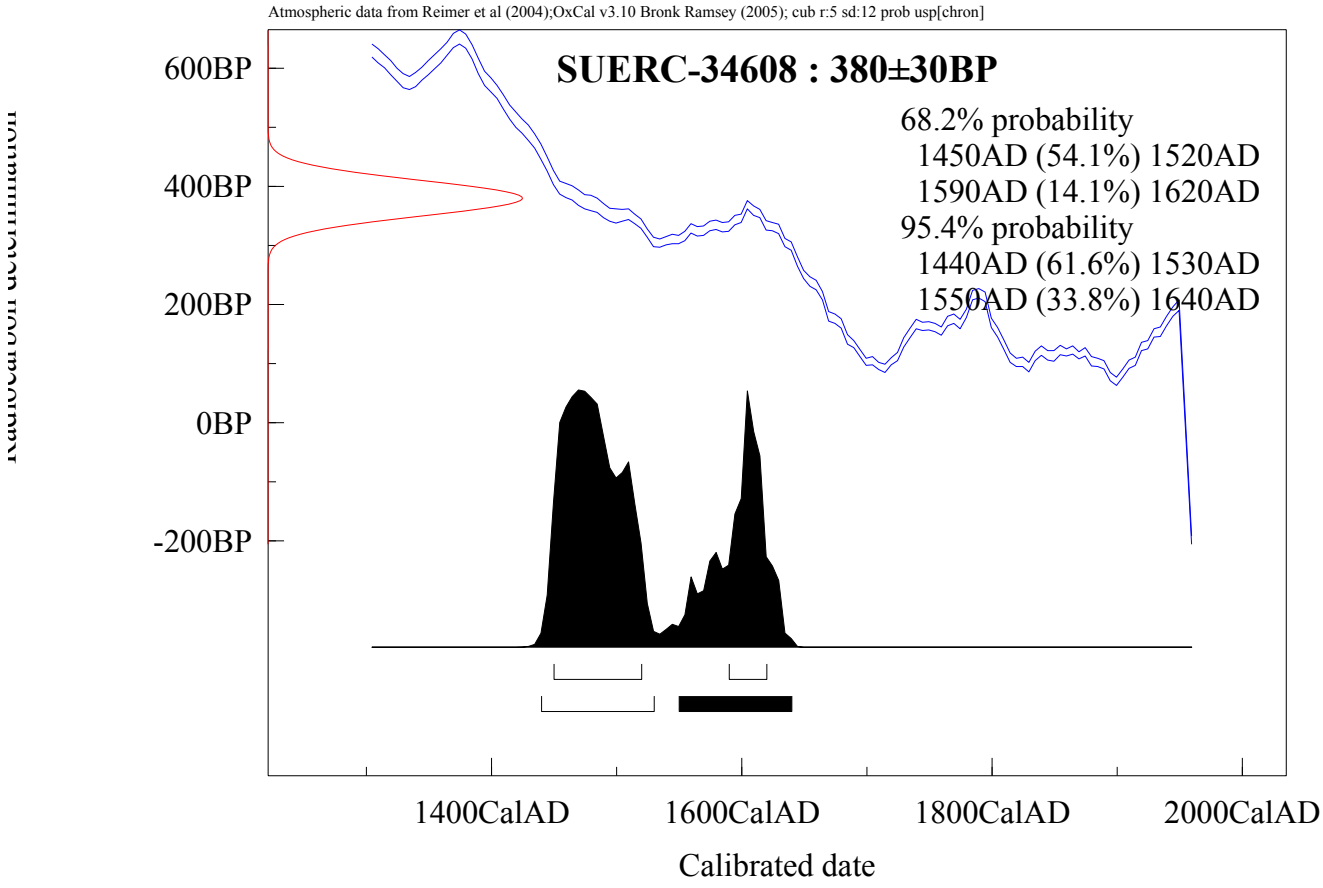
2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).

3. Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email g.cook@suerc.gla.ac.uk or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- Date :-

Checked and signed off by :- Date :-

Calibration Plot



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RADIOCARBON DATING CERTIFICATE

8 June 2011

Laboratory Code	SUERC-34609 (GU-24156)
Submitter	Dr Thomas McGovern Hunter College Zooarchaeology Lab Anthropology 695 Park Ave New York, NY10065 USA
Site Reference	Gufuskalar (GFS08)
Sample Reference	GFS 016 OC
Material	Bone : Caprine caudal vert
δ^{13}C relative to VPDB	-20.5 ‰
δ^{15}N relative to air	5.4 ‰
C/N ratio(Molar)	3.3
Radiocarbon Age BP	420 ± 30

N.B. 1. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).

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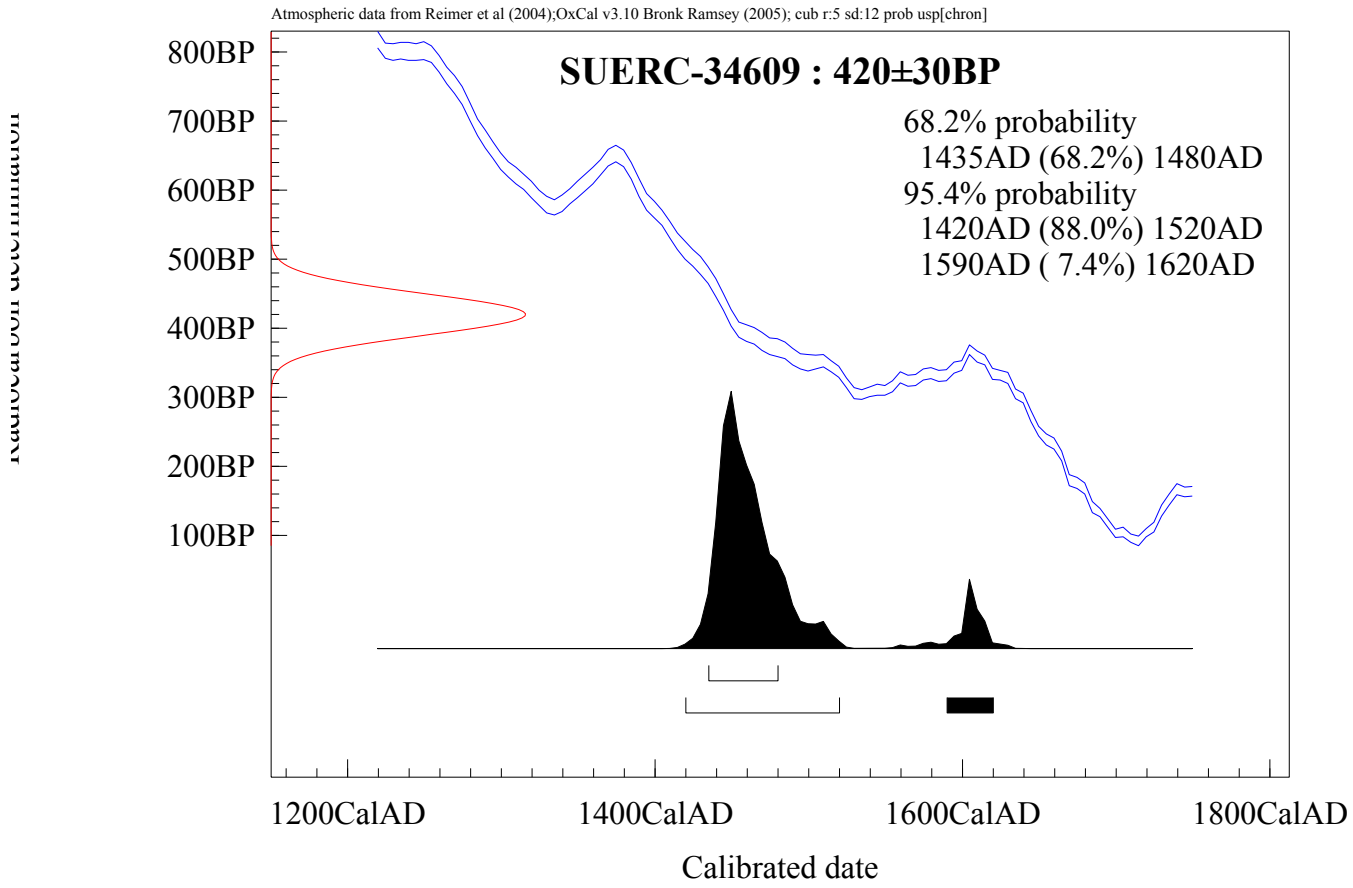
Conventional age and calibration age ranges calculated by :- Date :-

Checked and signed off by :- Date :-

Calibration Plot



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RADIOCARBON DATING CERTIFICATE

8 June 2011

Laboratory Code	SUERC-34613 (GU-24157)
Submitter	Dr Thomas McGovern Hunter College Zooarchaeology Lab Anthropology 695 Park Ave New York, NY10065 USA
Site Reference	Gufuskalar (GFS08)
Sample Reference	GFS 035 Bos
Material	Bone : Cattle astragalus
$\delta^{13}C$ relative to VPDB	-22.1 ‰
$\delta^{15}N$ relative to air	2.3 ‰
C/N ratio(Molar)	3.2
Radiocarbon Age BP	405 ± 30

N.B. 1. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).

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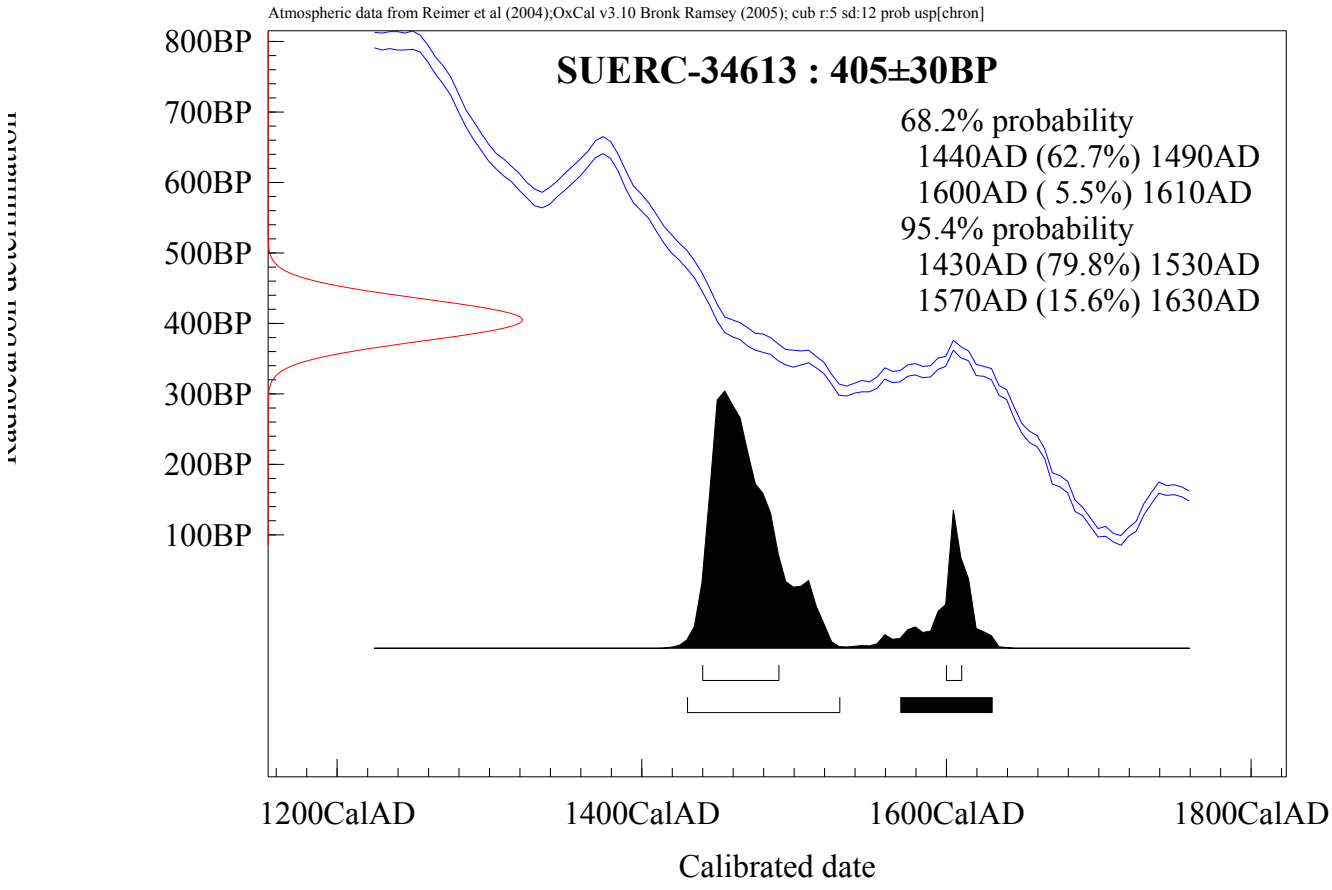
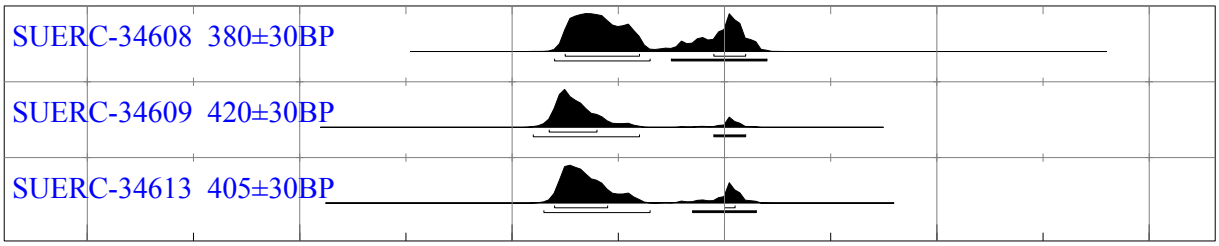
Conventional age and calibration age ranges calculated by :- Date :-

Checked and signed off by :- Date :-

Calibration Plot



Atmospheric data from Reimer et al (2004);OxCal v3.10 Bronk Ramsey (2005); cub r:5 sd:12 prob usp[chron]



1000CalAD 1200CalAD 1400CalAD 1600CalAD 1800CalAD 2000CalAD

Calibrated date