



# Greenland 2007 Field Season - Preliminary Report



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## **Introduction**

This is a preliminary report of archaeological field work in the Vatnahverfi region of the Norse Eastern Settlement. The Danish Middle Ages & Renaissance Department at The Danish National Museum and the Greenland National Museum and Archives (NKA) collaborated with the Northern Science and Education Center at City University of New York (NORSEC/CUNY) to complete an archaeological project in Southwestern Greenland, in the Qaqortoq Municipality. The work was completed between July 18<sup>th</sup> and August 21<sup>st</sup> 2007. The project's main mission was to excavate Norse churchyards (Ø78 and Ø64) in order to determine the time of use of the small Greenlandic churches and their churchyards, by collection of datable material and bone samples for DNA and isotopic studies conducted by Dr. Jette Arneborg. The 2007 field season connected the *Churches, Christianity and Chieftains project* with the *Vatnahverfi Settlement project*. The responsibility for sondage trenches at several Norse farms were shared by both CUNY and the Danish National Museum. This preliminary report only describes the work done as a part of midden prospecting (the trenches) and omits all the work on the churchyards. All documentation produced; including photographs, plans, drawings, registers, GPS and coring data, is on file with The Middle Ages and Renaissance Dep. of the Danish National Museum. Field director for the project was Niels Algreen Møller assisted by Konrad Śmiarowski, Christian Koch Madsen, Poul Baltzer Heide, Lousie Felding, Louise Johansen and helpful and kind people of Greenland.

## **Ø78 Eqauiut - Excavation**

All gear and instruments were sorted and packed on zodiacs on July 20<sup>th</sup>. We set for Eqauiut from Qaqortoq around 11am and reached it a few hours later. The day was spent setting up and organizing the camp, supplies, tools and equipment, and a site tour. Camp was located about 5 minute walk from the site.



Fig.1 Arriving at Eqluit

The site is located on the south bank of a river flowing out of Tasersuaq Lake. The church and the main dwelling are located north of a modern dirt road (track) that connects the fjord with the modern sheep farm of Eqluit. Several Norse farming buildings are north and east of the main farm complex. The church ruin is visible on the surface as a roughly square stone and turf structure with the dyke slightly visible on the surface around the structure. The main farm house lies some 30 meters to the northeast of it. It is well preserved, and most of its rooms are distinguished in the surface topography. Several patches of lush vegetation indicated possible targets for midden excavation, located just a few meters outside of the house (as usually is the case with Norse middens). A grid was placed over the whole site in order to precisely map the site, and plan the church and the midden trenches for future reference.

Three main transects were used for systematic coring at 1 and 2 meter intervals. All cores produced poor results. Judgmental coring based on vegetation growth, proximity to the dwelling, and terrain surface produced similarly disappointing results. The whole site (outside of the structures) is a shallow deposit (at maximum ~62cm) with ambiguous traces of cultural activity. Nevertheless, a trench was placed east of the main house in the area where coring data showed only 52 cm depth, but the deposit seemed most promising (bone flecks, charcoal and peat ash were recorded in the core).



## Test trench no.1

The trench was placed 7 meters west, down the slope, from the main dwelling. Its dimensions were 1x2 meters, and its purpose was to extract C14 datable material, such as local wood charcoal or twigs, from upper and lower layers for dating of the settlement and abandonment of the site, and bone material for zooarchaeological analysis.

During the excavation it became soon apparent that the preservation was very poor at this site (as suspected while coring) and very few intact bone fragments were found. Most were either reduced to wet powder on touch, or smeared like butter when touched with a trowel. Nevertheless, the whole trench was hand excavated with trowels and all material was wet sieved through a 4mm sieve mesh following the NABO protocols. Only the densest animal bones such as dental enamel, and seal bullas (very hard skull fragments) preserved at all. Even the caprine (sheep/goat) teeth were very fragmented and fragile. Most bones from this trench consisted of calcite, burned, unidentifiable, small (~ 1-2cm) bone fragments and dental enamel.



Fig.2 Trench no.1 under excavation and after.

Preservation conditions were most likely affected by the good drainage on the site where the underlying sterile soil is composed of sand, gravel, and stones. Water is fast absorbed by such deposits and had washed away most organic archaeological contents. This was clearly visible in the stratigraphic profile of this trench, where 2 main cultural layers were hardly distinguishable, testifying further to the good water drainage. Bone preservation at the churchyard was similarly poor, but different site formation processes were at work there.

After excavating Trench no.1 we still had a few days left at this site while the other part of the team excavated the churchyard. We decided to place another test trench in the second most promising place of the site in search for better preservation of organic material.

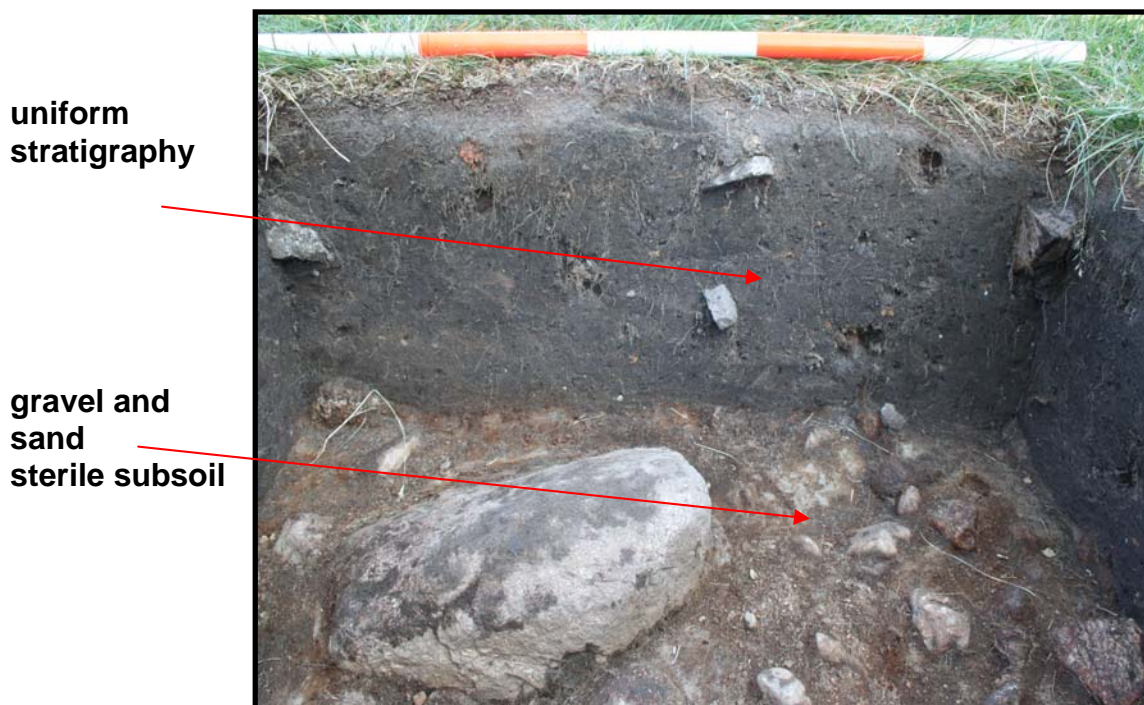


Fig.3 Trench no.1 N profile

### **Test trench no.2**

Trench no.2 was located 5 meters east of the main dwelling site and had dimensions of 1x1m. Even though both trenches represented different midden deposits the preservation was similarly poor. The same methods were applied to excavate this trench as Trench no.1, and the only difference between them was that no.2 contained more large stones from wall collapse in its upper layer as it was located closer to the structure.

This site has very little potential for further zooarchaeological excavations due to the preservation conditions. Some local charcoal (burned twigs) was recovered for C14 dating.

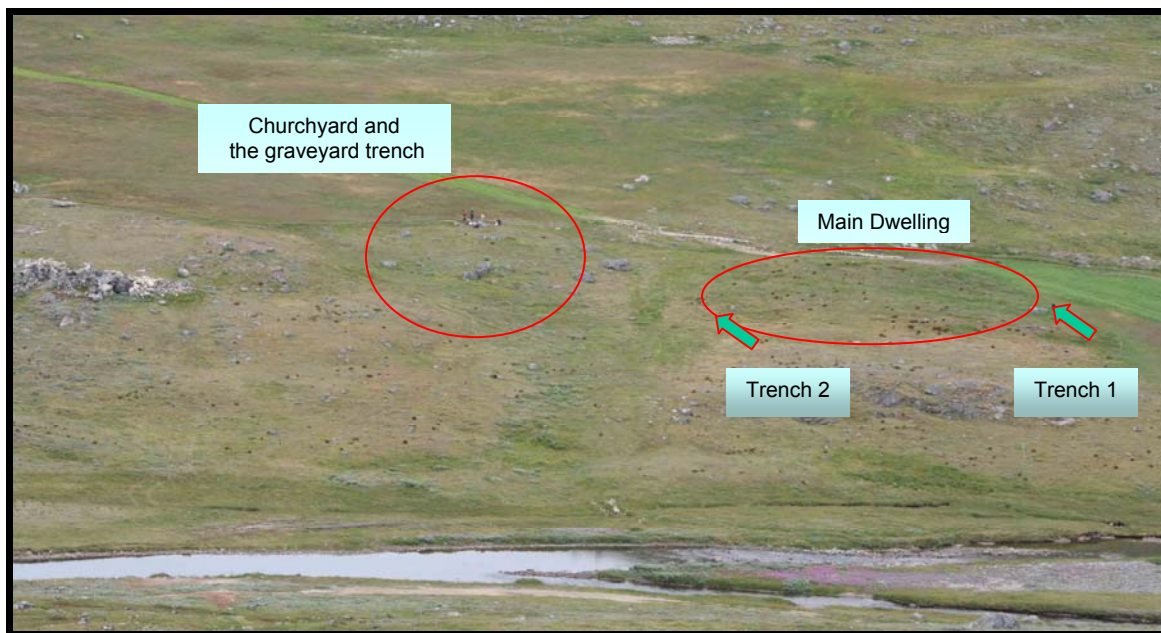


Fig.4 Ø78 Eqluit looking south

### **Coring Survey - July 30th**

After completing the excavation of both trenches we undertook a surveying and coring trip on the eastern bank of Igaliku Fjord (western boundary of Vatnahverfi region). We visited 4 coastal sites already registered and mapped by previous expeditions. Farm sites: Ø196, Ø172, Ø65, and Ø60 were cored in search for good midden preservation.



### **Ø196 Ruin group - Nimerialik**

The site is located just about 2km NW of the Eqaluit farm complex (see the map on the last page) and consists of a main dwelling and few economy buildings scattered north and east of it. Systematic and judgmental coring showed almost non existing cultural deposits along the structures placed on the south slope of a hill. It is very likely that water erosion had washed away those deposits. The sterile soil below the thin topsoil (~30 cm) was very similar to the one at Eqaulit (sand, gravel, and stones mix) and coring did not produce promising results. There were some traces of construction turf alongside the main dwelling (notably from the collapsed walls), but all poor in cultural traces such as charcoal, ash or bone. It seems like there are no midden deposits at this site anymore.



Fig.5 Structural turf at Ø196

### **Ø172 Ruin group - Tatsip Ataa**

The vegetation at the site is very lush, and the main dwelling was easily recognized by surface topography. There had been an early 20<sup>th</sup> century sheep farm at this site and there are some remnants of it even now. Although this place no longer serves as a working farm, a small vegetable garden and a summer house are located there. Traces of old animal enclosures and old building foundations (probably pre 1970's) are still visible south of the archaeological site. One of the animal enclosures is located on top of a small Norse farm building. There is a landmark of Thule culture located northwest of the main Norse archaeological settlement. A well built stone (cairn) grave is in the center of a

small valley leading from the Igaliku Fjord in the west to the Tasersuaq Lake in the east. This grave must have been placed there after the Norse abandonment.

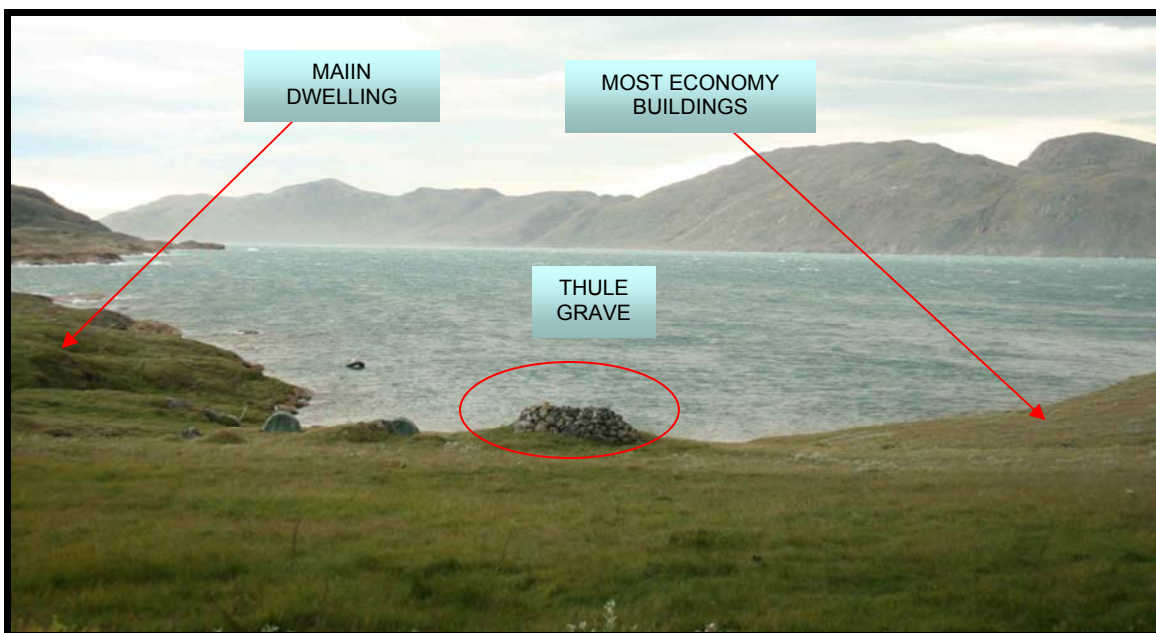


Fig.6 Ø172 Tatsip Ataa looking east during a storm.

As with the previous site, coring transects were placed on all four sides of the main dwelling. Coring north of the dwelling produced best results. On a line of 10 meters, beginning from just outside the building, we recorded a rich, well preserved midden deposits reaching 120cm in depth. Bone fragments, preserved wood, ash, charcoal and turf traces were observed in the cores. This midden deposit extends for at least 8 meters north from the house. It was decided to place a trench here later this season. Transects east, south, and west of the structure did not reveal any midden deposits, just light cultural sediments.

### Ø65 Ruin Group – Atikilleq

Further north we landed at Ø65. This site has a very well preserved building of unknown function. A long hall with stone walls still standing is similar to the “feasting” hall structures at Gardar and Hvalsey. The main dwelling is located close to the shore and at first it seemed that the midden associated with it would have had eroded to the sea. The erosion face present there shows a good



geological profile of the site, but no archaeological deposits. Here too the subsoil was made of stone and gravel, providing for excellent drainage of the site and poor organic preservation conditions.

After extensive judgmental coring around the main house structure no midden deposits were found. Very little cultural activity was recorded, apart from occasional charcoal specs. This site would have most likely proven unrewarding if excavated to recover an archaeofaunal collection.



Fig.7 Ø65 looking north

### **Ø60 Ruin Group - Isotarfik**

We arrived at this site during very heavy rain, therefore the only thing we did that day was to perform a series of cores around the main dwelling structure. As with most Norse ruins it was easily visible on the surface, with distinct rooms. A transect of soil cores west of the house revealed a midden deposit. Bone flecks, charcoal, peat ash, and some turf were recorded in the cores. The depth varied from ~20cm to ~60cm. Later in the season Niels Møller revisited the site several times, and excavated a 1x2 meters trench in the most promising area.

That trench was excavated with mechanical layers as there was not enough natural stratigraphy to follow (similar situation as in Eqaluit). All material was wet

sieved through 4mm mesh sieve, and a small control sample was sieved using the 1mm mesh.

Only a few species were distinguished in this collection, and there are so few bone elements recovered that it can not be treated more than just an incomplete list of species utilized at the site. Cattle, caprines (sheep or goat) and harbor seals were the only animals positively speciated from the bones recovered. The preservation at this site was equally unsatisfactory as at Ø78.



Fig.8 East profile at Ø60 – note the uniform stratigraphy and sand/gravel subsoil (as at Ø78)

### **Excavation at Ø172 Tatsip Ataa**

On August 1st, we began excavations at Ø172 Tatsip Ataa. A 1x3 meter trench was placed on an E-W axis in the area where coring data confirmed good preservation, and a 120cm deep midden deposit. In two days, the size of the trench was doubled in size (2x3m) as it became apparent that the preservation was good, and there is a chance of obtaining a considerable zooarchaeological collection from this site. The trench was located approximately 5 meters west of



the main dwelling. All stratigraphic units (contexts) were assigned consecutive numbers, described, measured and wet sieved with 4mm or 1mm mesh screen in the waters of the Igaliku fjord.

Note: The 1mm mesh was easier to use in this field conditions (bending over water table of the fjord), therefore most of the deposits were wet sieved that way.

From the very first layers preservation proved to be much better, and we recovered better quality and more bones there, than at Ø78. Steatite vessel fragments were present even in the very first layer.



Fig.9 Wet sieving with 1mm mesh in Igaliku Fjord

### Description of Units:

**Unit [001]** - consisted of mixed turf deposit with coarse sand, with some charcoal present. This was just the root layer. It already yielded some bones (both wild seals and cattle bones), steatite fragments and charcoal. Two buckets were sieved through a 1 mm mesh sieve and the rest in the 4mm sieve.





**Unit [002]** - gray silt midden deposit with yellow turf lumps. There are several large (head size) stones in it, most likely fallen after the collapse of the building walls and roof. In this layer the frost action is very visible in form of the oxidized polygons. Materials from this layer include bones, charcoal, and soapstone vessel fragments. Five buckets were wet sieved through a 1 mm mesh sieve and the rest through the 4mm sieve.

**Unit [003]** – a mechanical layer. After cleaning [002] the distinction between the next layers was not clear enough so we decided to dig a 10cm arbitrary layer, and expected that the coloring and texture of the deposits would change, so a stratigraphic unit could be distinguished. Six buckets of soil from this context were wet sieved with 1mm mesh while the rest was wet sieved with the 4mm mesh. The first fish bone at this site was found during sieving (arctic char). Large stones from wall collapse were still present.

**Unit [004]** - a mechanical layer (same as [003]) Consists mostly of dark gray sandy silt. It also contains many frost polygons, and the oxidation is even more severe than in previous layers. The deposit looks very red-brown, although it is obvious that it is a false and misleading coloration. Bones, charcoal, peat ash and soapstone artifacts are present in this layer, and so are the large structural stones. The first piece of iron slag was also recorded in this layer. 100% of all the soil (35 buckets) was wet sieved through a 1mm mesh in the fjord.

**Unit [005]** – mottled mid dark gray sandy silt with specs of light yellow peat ash. Frost action is still clearly visible, but much less than in previous layers. Structural stones are present. Charcoal, bone, soapstone vessel fragments are all present in this layer too. Some bones have a lot of oxidized iron and a red “glaze” to them. All 33 buckets were sieved with 1mm mesh sieve (100%).



**Unit [006]** - dark grey midden deposit rich in peat ash and turf. Structural stones are still present. The coloration is very similar to layers [002] – [005] and they could probably be safely combined together as one on account that they all have very visible frost polygons. Their respective materials were most likely mixed together by frost action. In this layer the preservation gets even better as there are wood fragments appearing and the bones are harder, and less dense elements appear more often. Full 100% (16 buckets) of this layer was wet sieved through the 1mm mesh screen. (Left - Fig.10 4mm sieve)

**Unit [007]** - gray silt mottled with spots of yellow turf (less than in [006]). The frost polygons are present, but there are no large structural boulders anymore, except some small (~10cm) cobbles. Charcoal, wood, and bones make the cultural composition of this layer. Some fire cracked stones are present. All 90 buckets (100%) were screened through the 1mm mesh.

**Unit [008]** - black/gray colored silt with much charcoal, yellow turf lenses and fire-cracked stones. This layer is possibly a re-deposition of floor layers from the house structure. Excellent organic preservation, and damp, even wet conditions. A lot of twigs and small wood pieces are excavated. Five buckets (100%) were wet sieved through the 1mm mesh.



Fig.11 Ø172 under early stages of excavation

**Unit [009]** - medium-gray silt mixed with some coarse sand, brown turf and charcoal. Frost polygons are still visible slightly in the western end of the trench. The amount of wood and twigs is considerably lower (this is not a re-deposited floor) but the amount of bones is comparable to layer [008]. All 65 buckets (100%) of

the deposit were wet sieved with 1mm mesh.

**Unit [010]** - another episode of re-deposited floor cleaning. Black, wet silt with some coarse sand and very high quantities of twigs and charcoal mixed with bone make it slow to excavate. There are several small cobbles and fire cracked stones present.



Fig.12 Bone sample from context [012]

**Unit [011]** - dark, gray deposit of silt mixed with yellow turf specs. No frost polygons are present anymore. Bones, twigs, steatite vessel fragments and charcoal are as abundant in this deposit as in previous layers of this midden. All 35 buckets (100%) were wet sieved with 1mm mesh.





Fig.13 Steatite artifact (possibly a net weight) and re-deposited floor [012]

**Unit [012]** - another episode (or several episodes) of re-deposited floor layers. The organic component is almost equal to the amount of soil in this layer. Black and gray in color, had a strong smell and was wet. Bones, wood, twigs, and charcoal was extremely well preserved. Selected 84 buckets were wet sieved with the 1mm mesh.



Fig.14 Antler comb from [012]

**Unit [013]** - a lens (size of about 70cm x 1m and 8cm thick) of yellow/gray turf within context [012]. It had less wood and bones and was probably part of debris from fixing a wall of the nearby structure. It had been deposited at the time of major maintenance/cleaning of the house.

**Unit [014]** - brown/gray turf layer mixed with silt and some peat ash. Wooden artifacts, including rivets, nails, and handles; as well as bones, twigs, steatite fragments and charcoal, are numerous. This layer is waterlogged. Selected 12 buckets were wet sieved with 1mm mesh. Only ¼ of it was excavated as we ran out of time.



Fig.15 Wood objects



**Unit [015]** - brown, organic, pure turf deposit. Most likely a piece of turf placed over a trash heap to prevent the smell or blowing off of the contents. It has preserved very well. No archaeological material present in it. One bucket selected for sieving did not produce any results. Only ¼ of it was excavated as we ran out of time.

**Unit [016]** - black, wet, re-deposited floor cleaning deposit similar to [008], [010] and [012]. Only ¼ of it was excavated as we ran out of time. 4 buckets (100%) were wet sieved with 1mm mesh.

**Unit [017]** – the sterile soil. It is a smooth, greenish brown pure turf layer that is very water resistant. The moisture keeps above it, as it is hard to penetrate it; therefore, the site is not as easily drained as Ø78 or Ø196. Under it is solid granite bedrock that further prevents the drainage on the site, and helps the preservation of organic materials.





Fig. 16 Three meters long North profile of trench at Ø172 Tatsip Ataa with 2 major kinds of deposits visible. The first [002]-[007] with frost action are the main gray area with the brown/red oxidized polygons visible in the higher part of the profile. The more organic, wet, and well preserved layers [008]-[016] are the main black part (lower profile).

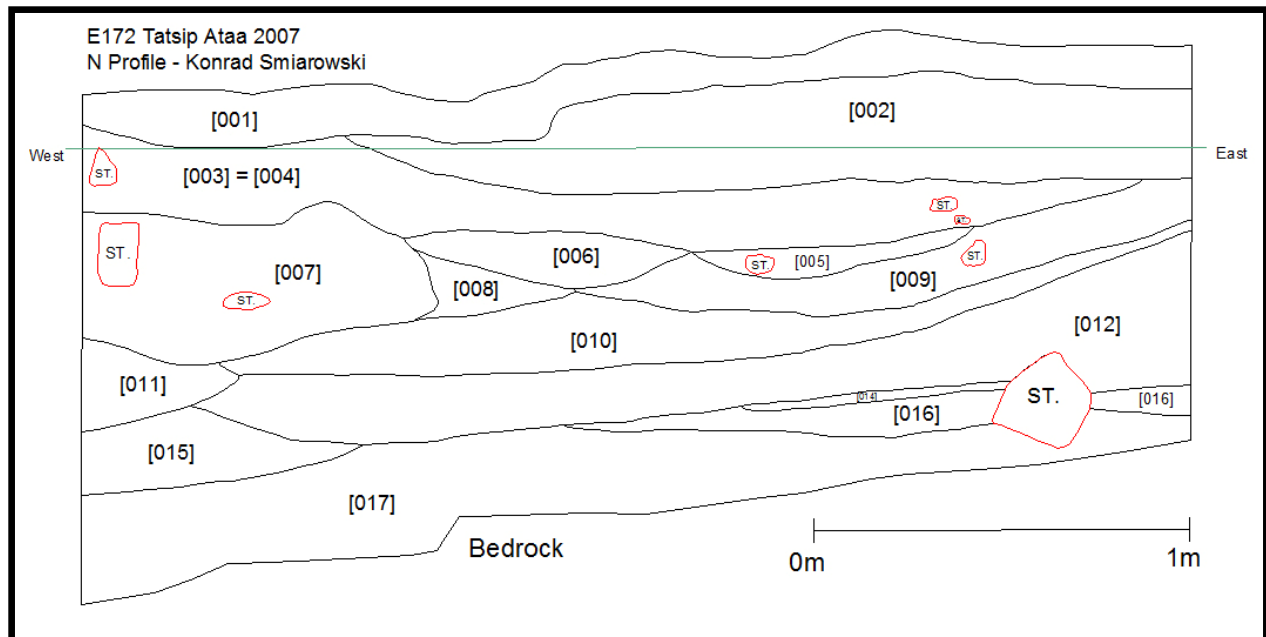


Fig. 17 North profile drawing with excavated layers indicated. Note that the profile drawing and stratigraphy in 2007 SILA field report no. 26 is only preliminary, and should not be treated as primary information on the excavation. This profile is updated and should be treated as the final version.

### **Excavation at Ø64 Ruin Group - Innoqquassaq**

While the Churchyard team excavated at Ø64 they have encountered a small midden deposit overlying the graveyard. A small, hand picked bone collection was shipped to NY (with all the faunal material from this season) and quickly analyzed. There were only 113 fragments present; therefore, as with Ø60 the analysis can not be treated more than just a species list. Nevertheless, a wide variety of species was recorded within this small sample.

Bones include almost all classic species utilized by Norse Greenlanders: harp, harbor and hooded seals, cattle, reindeer, caprines (sheep or goat), small whale (beluga size), pig and walrus.

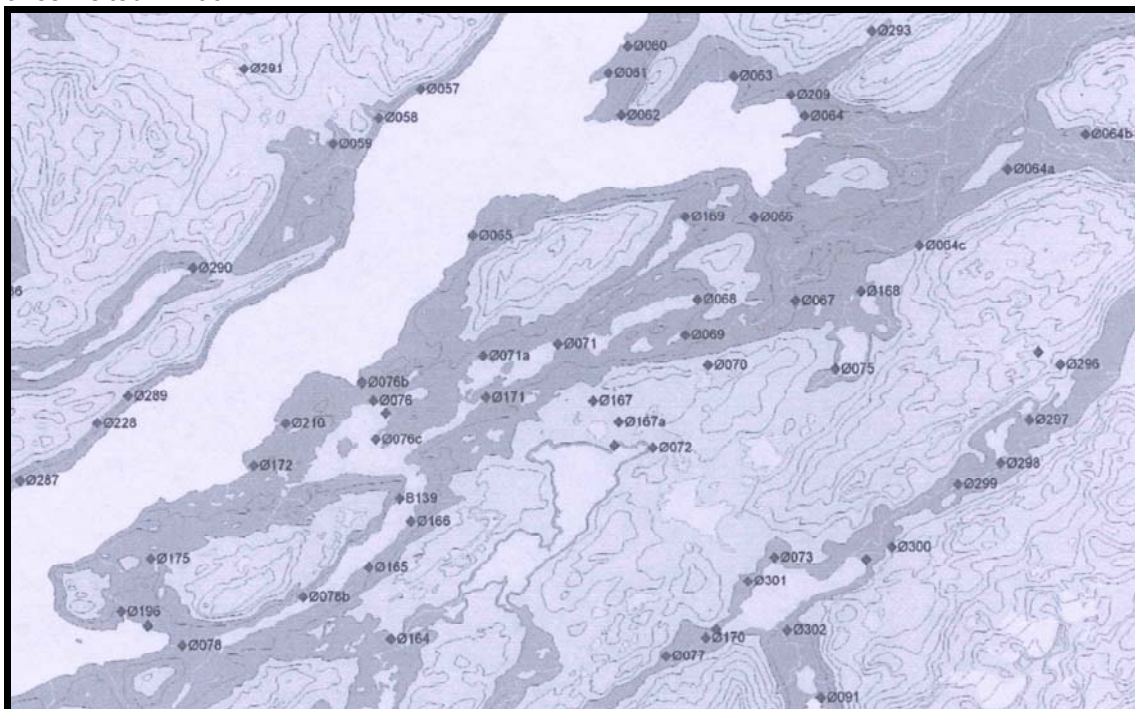


## Conclusion

The team going in the field this season was skeptical about encountering well preserved midden deposits in SW Greenland. Experiencing poor preservation at Ø74 last year the team did not expect to find such well preserved bone deposit as at Ø172. There is an opinion among archaeologists and environmental scientists that the poor bone preservation in this part of Greenland may be attributed to the freeze and thaw action connected to the recent climate change. The permafrost that kept the bones intact for centuries is no longer present year round, and the ground is freezing and thawing according to the seasons of the year and destroys the bone.

This is a preliminary report, or rather an informal narrative of the work that had been performed in the field during the excavation season. With the bones shipped to the zooarchaeology laboratories in CUNY Hunter College and Brooklyn College an analysis is underway, and a further look into Norse Economy of the Eastern Settlement will be possible. Soon a bone report will follow this field report.

Fig.18 Vatnahverfi map by Niels Algreen Møller with most Norse sites indicated, including the ones visited in 2007.







## **References:**

Algreen Møller, Niels & Koch Madsen, Christian 2006a. *Rapport om rekognoscering og opmåling af nordboruiner i Vatnaverfi Sommeren 2005*. SILA Feltrapport nr. 24: 39 pp., 2006.

Algreen Møller, Niels & Koch Madsen, Christian 2006b. *Gård og Sæter, Hus og Fold - Vatnahverfi 2006. Rapport om besigtigelser og opmålinger i Vatnahverfi , sommeren 2006*. SILA Feltrapport nr. 25: 39 pp., 2006.

Algreen Møller, Niels (ed.), Lund Johansen, Louise, Koch Madsen, Christian, Felding, Louise, Baltzer Heide, Poul & Smiarowski, Konrad 2007. *Udgravninger af norrøne kirkegårde og møddinger. Rapport om opmålinger og udgravninger i Vatnaverfi, Sommeren 2007*. SILA Feltrapport nr. 26: 62 pp., 2007.

Vebaek, C. L. 1991. *The church topography of the eastern settlement and the excavation of the Benedictine convent in Uunartoq Fjord*. Meddelelser om Grønland, 14. Copenhagen: Komm. for Videnskabelige Undersøgelser i Grønland.

Vebaek, C. L. 1992. *Vatnahverfi: an inland district of the Eastern Settlement in Greenland*. Meddelelser om Grønland, 17. Brenderup: Geografforl.

Vebæk, C. L. 1993. *Narsaq: a Norse landnáma farm*. Meddelelser om Grønland. Man & society, 18. Copenhagen: Kommissionen for videnskabelige Undersøgelser i Grønland.