Neighboring houses: Report from an archaeological trench at Store Sandvika, Hasvik, Finnmark

Author: Erlend Kirkeng Jørgensen[1,2]
ORCID: 0000-0002-8573-4489
1. UiT The Arctic University of Norway. Department of archaeology, history, religious studies and theology. Postbox 6050 Langnes. 9037 Tromsø.
2. NIKU High North Department. Framsenteret. 9007 Tromsø

Store Sandvika with a view towards Stjernøya and Øksfjord. EKJ.

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Abstract

In august of 2018, a minor excavation was made across two adjoining Stone Age house pit features at the newly discovered site of Store Sandvika (Site ID: 221255, Hasvik municipality, Finnmark county), as part of the Stone Age Demographics project at UiT The Arctic University of Norway. The objectives mainly concerned:

- To look for stratigraphically identifiable features useful for the understanding of house contemporaneity and the identification of multiple occupation phases.
- To look for the preservation of organics, such as bone/wood tools or organic refuse.
- To identify datable material from multiple horizons within each house.

Shoreline displacement suggests that the terrace was suitable for habitation already at the earliest post-glacial colonization, and that the isostatic uplift made the lower laying terrace of 12-10 masl inhabitable by approx. 10.000 years ago (cal BP). However, the transgression of the entire lower terrace would make the upper terrace into the only inhabitable surface in the Store Sandvika bay for millennia. This now also appears to be confirmed by the dates produced from the site.

Datable material was only retrievable from one of the houses, all centering on 3600 BC. The lack of datable material from the other house made it difficult to determine questions of contemporaneity and temporal relatedness, yet stratigraphic evidence suggest variable age and possible reuse of the houses given the stark variation in peat thickness covering the adjoining houses, as well as the apparent secondary dug-down in one of the houses.

Repeated reuse of the site seems likely based on both the identification of debitage from chert/silicified slate below the house floor of what stratigraphically speaking should be the oldest house – as well as dates most likely indicating tightly spaced, yet separate habitation events. No artifacts or debitage whatsoever was uncovered within the house areas. The dates should imply that the houses most likely would contain rich slate tool inventories as is common for house features of this period. The lack of finds may solely be credited to the very minimal spatial extent of the investigation – however specific waste management practices favored by the steep and ocean-front terrace, may also contribute to less within house debitage.

The report ends with a contextualization of the site focusing on the specificity of Younger Stone Age sites located atop fluvial deltas elevated significantly above contemporaneous sea level and factors that might affect the data catchment and inventories from such sites – such as waste management practices.

1 Site location and geomorphic properties

In august of 2018, a minor excavation trench was made across two adjoining Stone Age house pit features at the newly discovered site of Store Sandvika (Hasvik municipality, Finnmark county), as part of the Stone Age Demographics project at UiT – the Arctic University of Norway. The excavation we led by the author, with field assistance by Charlotte Damm and Eirik Haug Røe. The site has now been allocated the following Askeladden site ID: 221255.

The Store Sandvika site is positioned at the very southwestern tip of the Sørøya Island (Fig.1), on the opposite side of the Håen hill leading down to Hasvik city center, which contains the highest recorded density of pit houses at Sørøya – now also confirmed by extensive surveys made by the Stone Age Demographics projects across large swaths of the island (Damm et al. 2021).

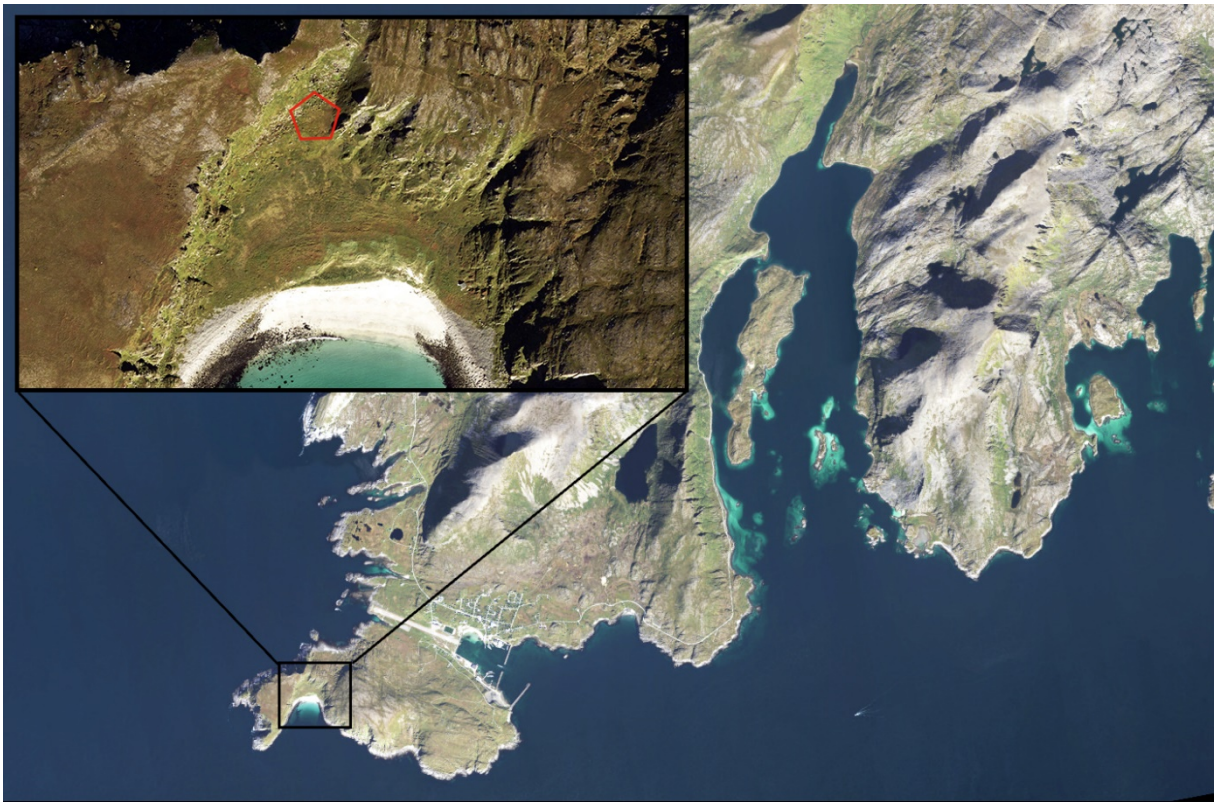


Figure 1. *Large: Overview of the Hasvik city center and Hasfjord area. Small: Close up of the Store Sandvika bay, with the archaeological site marked by red polygon. Satellite photos collected from GeoNorge.no*

The site was discovered by Kenneth Webb Berg Vollan and Peter Jordan during surveys conducted in the Hasvik region during august 2016. The site consists of 6 (possibly 7) house pits ranging in size from 2,9x2m (5,8 m^2) to 4,8x3,2m (15,36 m^2). Four of the houses are positioned on the very edge of a tall and steep terrace of unconsolidated masses, one house pit is somewhat withdrawn from the terrace edge at a slightly higher elevation, and

one house amongst a boulder field at the back of the terrace at an even higher elevation. In addition, one uncertain feature is located at the foot of the steep terrace (Fig 2). The house pits are clearly visible on the modern surface as oval/rectangular depressions surrounded by wall mounds, also visible on LIDAR (Fig 3). Detailed description of the individual structures can be found in (Appendix 2).

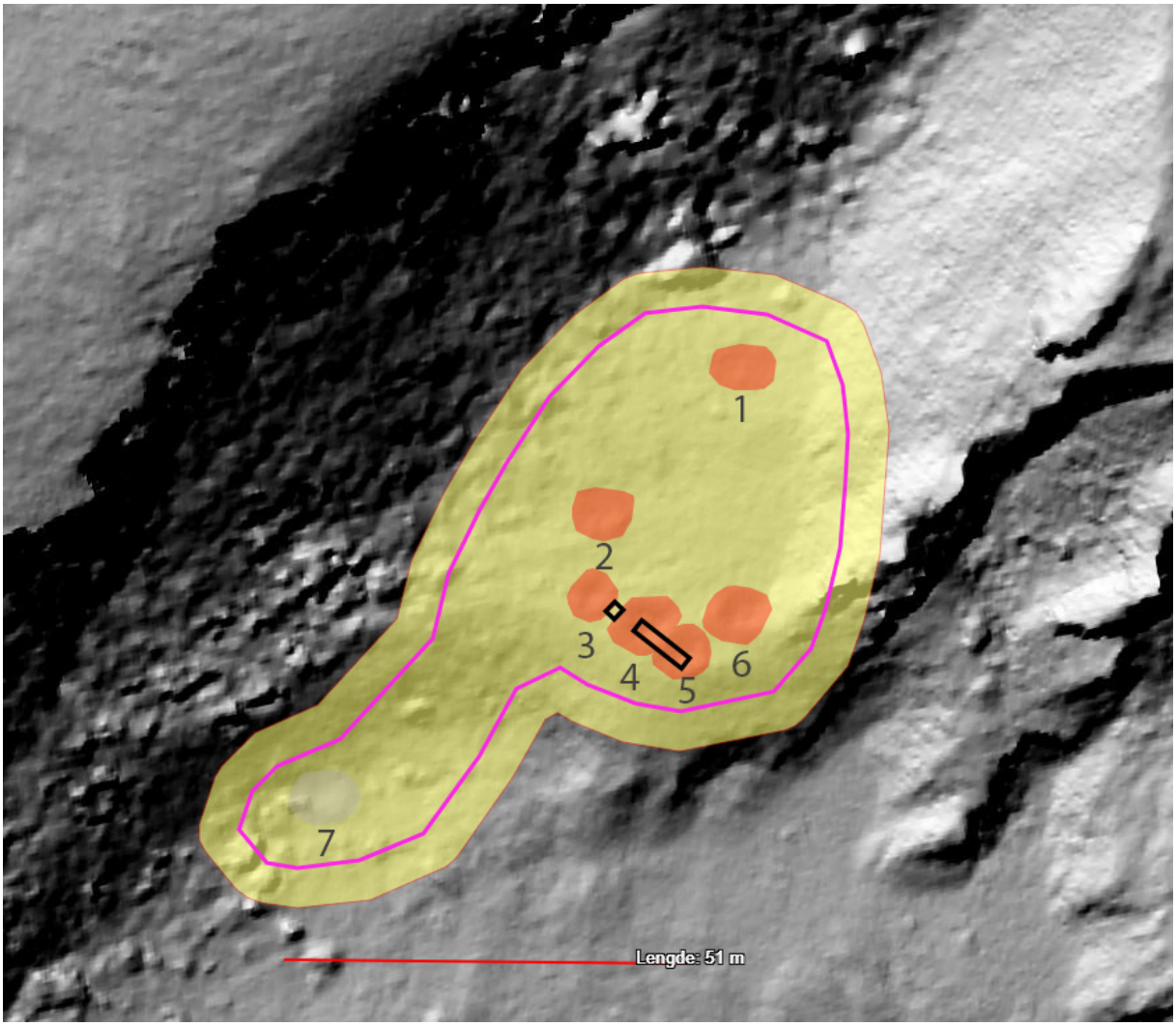


Figure 2. *Site plan and number of houses at Store Sandvika site. Rectangular boxes denominate excavation areas. Small square = negative test pit in area between house 3 and 4. Rectangle = excavation trench cross-cutting houses 2 and 3.*

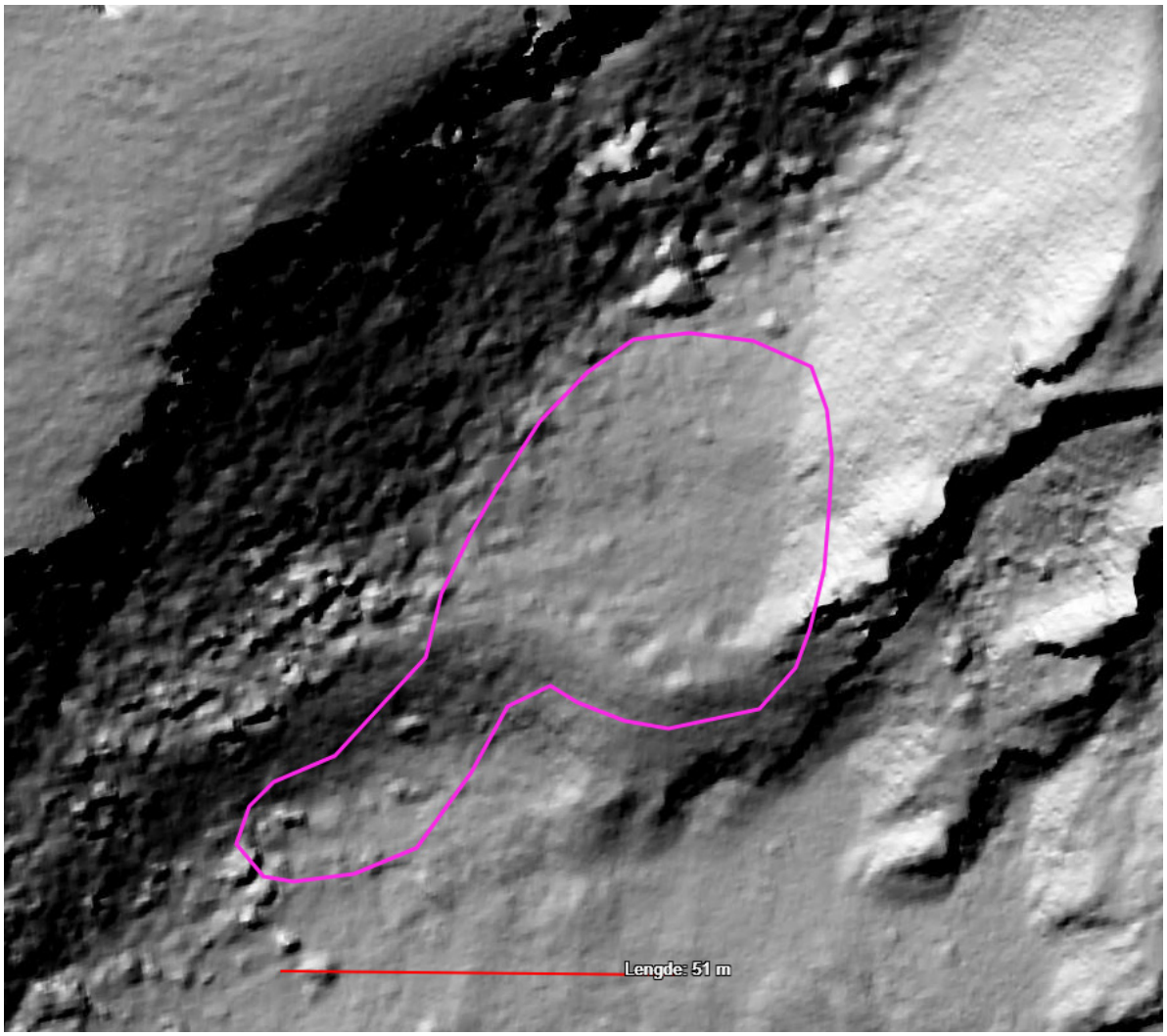


Figure 3. *Lidar image of the Store Sandvika site. Note depressions at the edge of the terrace. Cross reference with Fig 2 for location of houses.*

The site appears to be very well preserved. Its location atop a tall, steep and sheltered terrace at the very back of the bay, crammed into a ravine, all makes it invisible from the current beach and lower terraces. This may have contributed to few visitors and less modern disturbance.

The inhabited terrace is at approx. 25 m.a.s.l. which is significantly higher than what is regular for prehistoric settlements in the area, which are mainly positioned on the Tapes transgression beach ridge (~12 m.a.s.l.) or below. The very high and steep terrace at Store Sandvika descends directly to the low-gradient marshy flatland starting at 12-10 masl, gradually leading down to the modern shoreline.

Shoreline displacement (Fig.4) suggests that the terrace was suitable for habitation already at the earliest post-glacial colonization, and that the isostatic uplift made the lower laying terrace of 12-10 masl inhabitable by approx. 10.000 years ago (cal BP). However, the transgression of the entire lower terrace would make the upper terrace into the only

inhabitable surface in the Store Sandvika bay for millennia. The use of the very high upper terrace is therefore impossible to date on the sole use of shoreline displacement.

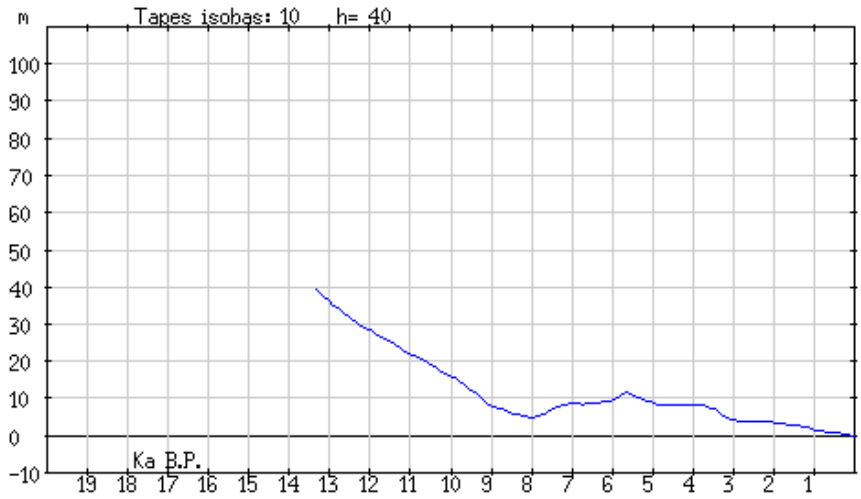


Figure 4. *Shoreline displacement curve relevant to the site. From SEALEV.*

The lack of any intermediary terraces between 25 and 12 masl may also have contributed to lesser attractiveness for reuse of the site at late stages, as the distance to the beach would rapidly increase and is currently located 200 meters distance from the terrace (mid-tide measurement).

These features contributed to the selection of this site for further investigation. Both in order to test the assumed shore-boundedness of coastal house features, which assumes a direct association between elevation and age, as well as to investigate a site with potential preservation of stratigraphic information – needed for the research agenda of the Stone Age Demographics project. In addition, the high elevation rules out transgression of the actual site, increasing the likelihood for the preservation of architectural and stratigraphic features, as well as organic remains. This is particularly an issue with Mesolithic sites. As they are often transgressed in the area, we are likely not identifying the full range of habitation sites and structures pertaining to this period, due to coastal erosion.

Concerning the stability and preservation of the inhabited terrace there are several issues of uncertainty. As seen in (Fig. 5, right), the houses are located on the absolute edge of the terrace. Such unconsolidated terraces are prone to erosion, particularly if cut through by rivers or with direct impact of ocean or tidal action, which is very evident by the erosion of the glaciofluvial delta hosting both the Gressbakken and Nyelv sites in eastern Finnmark (Jørgensen and Riede 2019). The terrace at Store Sandvika is not subject to erosion by running water today, but at higher ocean elevation, waves would brake directly at the foot/slope of the terrace and contribute to erosion. It is currently unknown to what degree this has affected the inhabited area of the site and whether several structures were originally present at the site.

It is likely that the origin of the fine-grained sediments (sand) uncovered at the terrace below the surface turf layer is to be found at the beach below, and that it has been transported onto the ridge through aeolian action.

Figure 5. *Left: Southward overview of site. Right: Eastward overview of terrace formation with site and some house pits visible at the front terrace. Both pictures from 2017, year before excavation. EKJ.*

1.1 Prior investigations

The site was discovered by Kenneth Webb Berg Vollan and Peter Jordan during surveys conducted in the Hasvik region during august 2016. Thus, no prior investigations had been made up until that point.

During the season of 2017 some soil probing across the site and a single negative test pit (Fig.6) was made in the area between House 3 and 4 (cf. Fig 2) - with the intention of assessing the geomorphological properties of the sites, as the project has been actively looking for sites with potential stratigraphical and organic preservation.

No anthropogenic markers were visible in the test pit/probes. Despite the lack of direct cultural markers, the test pit was informative of soil properties potentially conductive to the preservation of stratigraphical and organic features and excavation of a larger trench was decided upon.

Figure 6. *Negative test pit from the area between House 3 and 4. Photo: MS, 2017.*

1.2 Research questions

The objectives of the excavation were the following:

- To look for stratigraphically identifiable features useful for the understanding of house contemporaneity and the identification of multiple occupation phases.
- To look for the preservation of organics, such as bone/wood tools or organic refuse.
- To identify datable material from multiple horizons within each house.
- To relate the potential inventory to stratigraphic units and direct dates.
- To test the shore-boundedness of the site, given its remarkably high elevation.

2 Method

In order to investigate these issues while limiting the excavation with respect to preservation of the houses for future investigations and the work-load of the team, a slightly tilted, east-west oriented trench, of 5 m x 30 cm was laid out across the shared

wall mound separating House 4 and 5, extending approximately 1 meter into the floor area of both houses. An additional of 20 cm width was added to the squares positioned inside the floor areas (10X, 10Y and 10X, 14Y), making them 1 x 0,5 meters wide. The extension of the squares inside the houses was an in-field decision to facilitate the excavation of the very deep trench and for documentation purposes, which was not possible without a somewhat wider trench.

- The excavation trench was put up across the shared wall-feature of the two houses to look for stratigraphical evidence for either simultaneous or asynchronous construction, with the expectation that one of the houses would spill material on top of the wall mound or into the floor area of the other house – if asynchronous.
- The trench was positioned halfway into what looked like a possible depression in the wall connecting the two houses (interpreted as a possible hallway), as we wanted to investigate whether this feature visible at the surface had any association to sub-surface stratigraphical properties

Figure (7) illustrates the location of the trench within and across the shared wall-feature of the two houses before excavation.

Figure 7. *House 4 (left) and 5 (right) before excavation. View towards SE.*

A coordinate system of full meter subdivisions was set out at the start. The excavation was carried out using a stratigraphical methodology, after carefully removing the surface turf layer by hand. Recording was done as a combination of manual drawing and

description, as well as CPOS GPS measurements of the trench after completion, of its extension and depth.

3 Stratigraphical description

The stratigraphic sequence of the site is given following the standard scheme of (Retallack 2001:22):

- **O-horizon:** Surface horizon consisting of a grass/juniper-topped turf layer varying between 15 cm on the natural surface and on the wall mound, to 25 cm thickness inside House 5 and 10 cm thickness within House 4.
- **A-horizon:** Sub-surface horizon, very thin (<2 cm) and unevenly present. Consisting of a mix/transition between O and E horizons, visible in our trench as an organically enriched layer.
- **E-horizon:** Light-colored, grey sand. Bleached sand. Ranging from 15 cm of thickness inside house 5, to 8 cm of thickness on top of wall mound, to 5 cm inside house 4 (below which stratigraphical feature (x) was to be found).
- Stratigraphical feature (x) - Only inside the floor area of house 4 - **P-horizon:** Culturally enriched living floor layer, consisting of compact, heterogeneous, slightly fatty, brownish sandy soil (Fig.8 and 10). Interpreted as culture layer. The very edge of a hearth structure was identified in the northern profile at the lower end of this layer, consisting of black, sooty soil and fire-cracked rocks. Samples for radiocarbon dating were extracted (see results below). It is therefore not clear whether the hearth structure is older than, or contemporaneous with the floor deposit, as it could be dug through older deposits.
- **B-horizon:** Unsorted beach cobblestones and pebbles situated in black, marine enriched gravel, forming the natural sub-surface into which the houses were excavated.

The bright, sandy E-horizon (layer 1) was thinnest atop the wall mound and significantly thicker when nearing the house floors and within them. This, combined with the near-lacking distribution of larger pebbles into the floor area, give clear indications of floor excavation into the subsurface during the time of construction (Fig.8).

Figure 8. *Plan photo of stratigraphical feature (x). Note the markedly darker, brown color and heterogenous, more fatty soil of the feature, compared to the light, loose sand outside.*

***Figure 9**. S profile of trench. Model generated Johan Eilertsen Arntzen*

A scaled photogrammetry 3D-modell of the entire trench is presented in (Fig.9). The plan and profile drawing of the entire excavation can be found in the Appendix 1, in which all features discussed here can be scrutinized at will.

3.1 Explaining stratigraphical feature (x) and the variation in peat thickness

Considering that the modern turf-layer was considerably thinner inside house 4 (10 cm) compared to house 5 (25 cm), a younger age for the former may be feasible, given the rate at which peat formation takes place. Peat formation is affected by multiple factors, and the variable peat thickness could be attributed to e.g. differential drainage. However, this seems unlikely given the observation that the peat layer is of more or less homogenous thickness along the entire profile, while being markedly thinner where associated with stratigraphical feature (x) – see (Fig.9 and 10). What is more, the A-horizon was lacking above stratigraphical feature (x) in 10x,10y – underlining its potentially younger age.

Two options seem like plausible explanations for the variation in peat thickness:

1. That house 4 is of a considerably younger age than house 5, as less peat formation has been able to occur in the latter.
2. That the stratigraphical feature (x) is the result of more recent reuse of House 4 (such as re-excavation of the floor area resulting in the clear dig-down feature), potentially opening up for the possibility that the houses were originally constructed at about the same time.

One would also expect the turf layer to be thicker inside the house depressions than on the natural surface due to fluvial deposition and aggregation of masses into features of lower elevation.

A fireplace structure was apparently positioned partially inside or at the lower transition of the stratigraphical feature (x) – the dug down floor deposit – and in the transition between layer 1 and layer 2 - the lower-laying, natural pebble deposit into which the house was excavated during construction. It is therefore not clear whether the hearth structure is older than, or contemporaneous with the floor deposit.

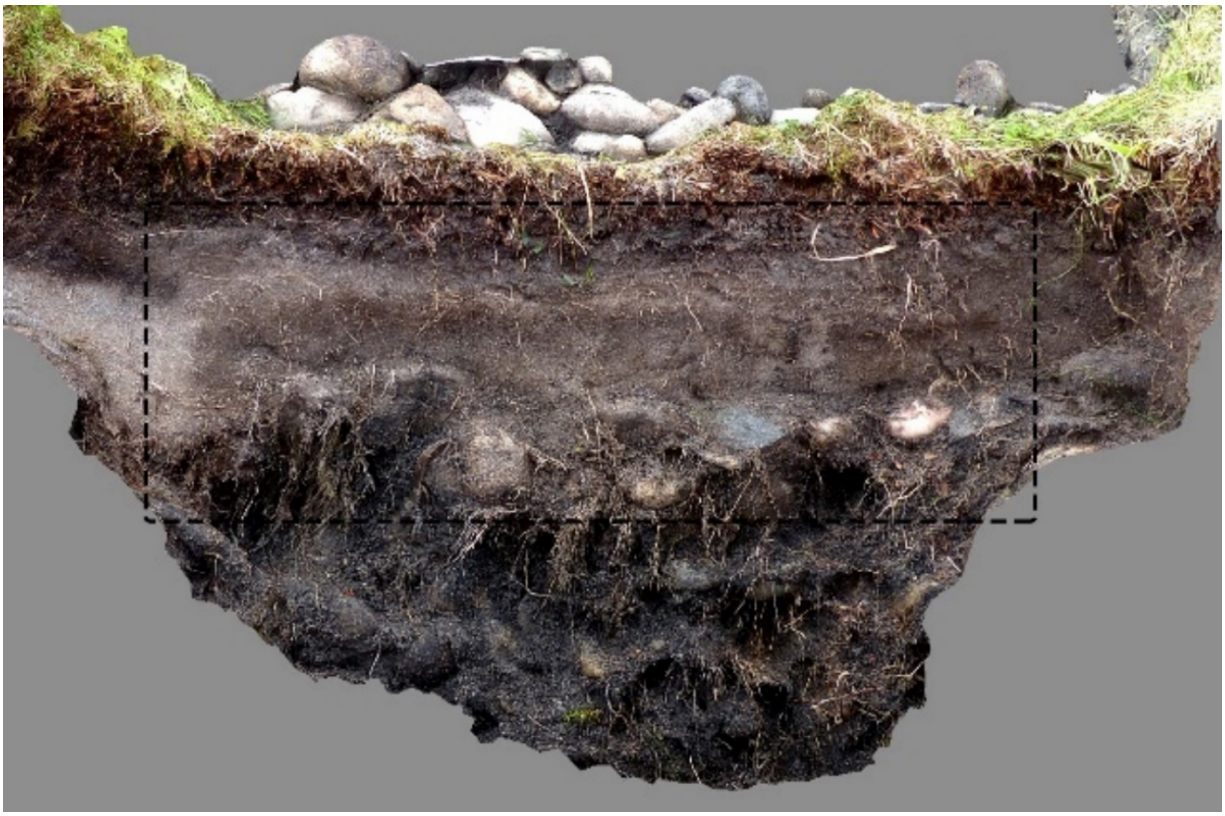


Figure 10. *S profile of house 4. Peat formation consideration and stratigraphical feature in House 4, at the transition between eastern wall mound and floor area. Note the marked transition from thick (left corner) to thin (right) peat in the picture.*

In order to make sure we did not miss any habitation phases older than the obvious floor deposits, we kept digging far into the natural beach deposits. When reaching >100 cm of depth in both house floors we were confident that no human impact would be encountered further down. The trench at completion is illustrated in (Fig.11). The decision to excavate well into the natural beach sediment was also fueled by the knowledge that finds have a tendency to migrate downwards in such unconsolidated sediments. No finds had been made up until the point of entering the sub-floor deposits.

Figure 11. *The excavation trench at completion. Direction: SE.*

4 Radiocarbon dating

Two charcoal samples were extracted for dating (Fig.12).

Both samples were collected from what appears to be the southern edge of a hearth/fireplace structure inside House 4, further extending into the profile in the direction of the central floor area.

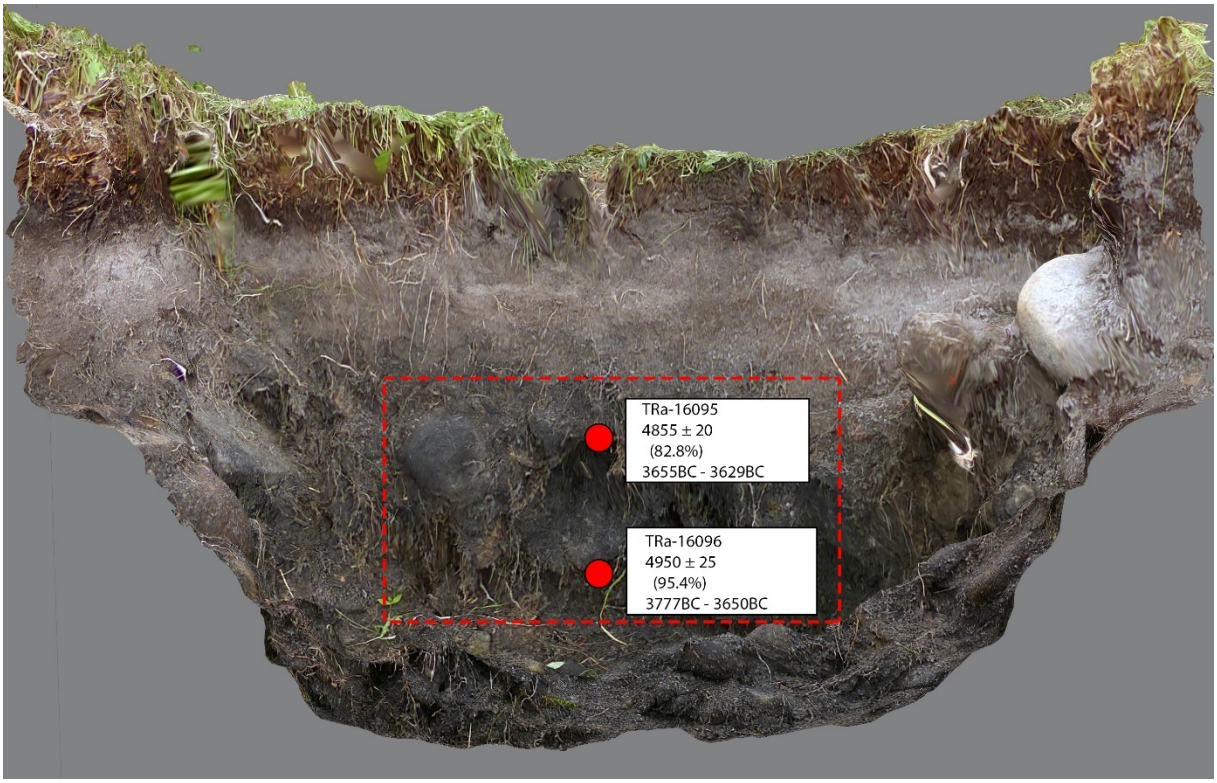


Figure 12. *N profile inside house 4, area of charcoal samples marked by red square. Model generated Johan Eilertsen Arntzen. Figure: EKJ.*

The fireplace structure was apparently positioned partially *inside* or at the lower transition of the stratigraphical feature (x) – the dug down floor deposit – and in the transition between layer 1 and layer 2 - the lower-laying, natural pebble deposit into which the house was excavated during construction. It is therefore not clear whether the hearth structure is older than, or contemporaneous with the floor deposit.

The samples produced the following results:

- Sample 1. (TRa-16095) From 10,60X, 10,25Y, Z:24 cm BS. Dating result: **4855 ± 20 BP**
- Sample 2. (TRa-16096) From 10,78X, 10,20Y, Z:30 cm BS. Dating result: **4950 ± 25 BP**

Full dating information and calibration curves are available in (Appendix 3).

Figure (13) plots the probability function of the two dates. There is the slightest possible overlap in curves. Thus, they can represent one event, although two closely spaced occupational events seem most likely. The inherent age of the dated material obscures

the absolute fixing of dates and makes the interpretation of probability distributions difficult. Both dates are made on short-lived wood (twigs) of Betula, suggesting fairly low inherent age and old-wood effects.

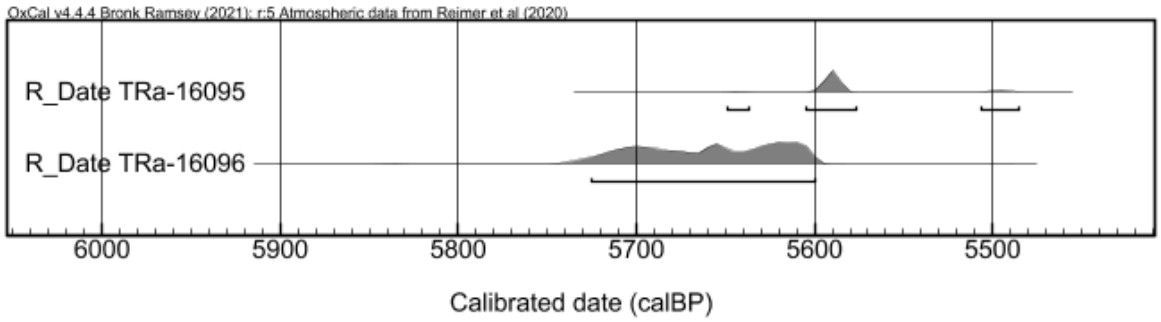


Figure 13: *Dating multiplot, probability curves shown.*

5 Finds

Absolutely no lithics or other cultural artefacts/debitage were found in or above the fine-grained sediments of the floor deposits or wall mound of the houses. The only finds made at the site were 3 minor pieces of chert/silicified slate debitage (Table 1), found below the floor area of House 5 – that is, within the natural beach deposits, in its uppermost part. A described earlier, we excavated far into this layer in the hope of finding more diagnostic lithic material that might have trickled down through the beach deposit, but no further finds were made.

Table 1. *Attributes of the lithic finds.*

Find nr	**Type**	**Length (cm)**	**Width (cm)**	**Thickness (m)**	**Weight (g)**
1	Splint	10	8	3	3
2	Splint	19	7	5	5
3	Flake (core reduction/ preparation flake?)	32	32	14	14

All three pieces are or of the same material, which is deep black of color, dense and somewhat glassy of quality. The crystalline structure is bonded and gives the impression of at least originally having been a sedimentary rock, potentially a slate metamorphized into a meta-chert.

The quality of the material makes it very difficult to assess what purpose was intended during its working/reduction. As the quality within a single nodule can vary significantly, it is difficult to tell whether this is from early stages of reduction of slate tool production on highly crystalline material (which indicate early slate period) or whether it stems from some sort of blade/flake production (which is non-diagnostic in terms of timing without further specification).

The larger flake (Fig.14 and 15) has a clear platform and a fairly straight back, that give the impression of platform trimming or platform reduction made through direct percussive technique. If correct, it could be a platform rejuvenation flake from a microblade core. In that case, suggested age would be remarkably old, given the find context below the floor area of a highly visible and well-preserved pit house. Unfortunately, no datable material was uncovered from House 5, making inferences on ages less reliable. The dates from the neighboring House 4 provide some time reference for the use of the site, though not necessarily of the undated House 5 or the depositional timing of the lithic debitage, which technologically should significantly pre-date the Younger Stone Age dates provided from the neighboring house. A late Early Stone Age date (8000-7000 cal BP) would be expected by the lithic "inventory".

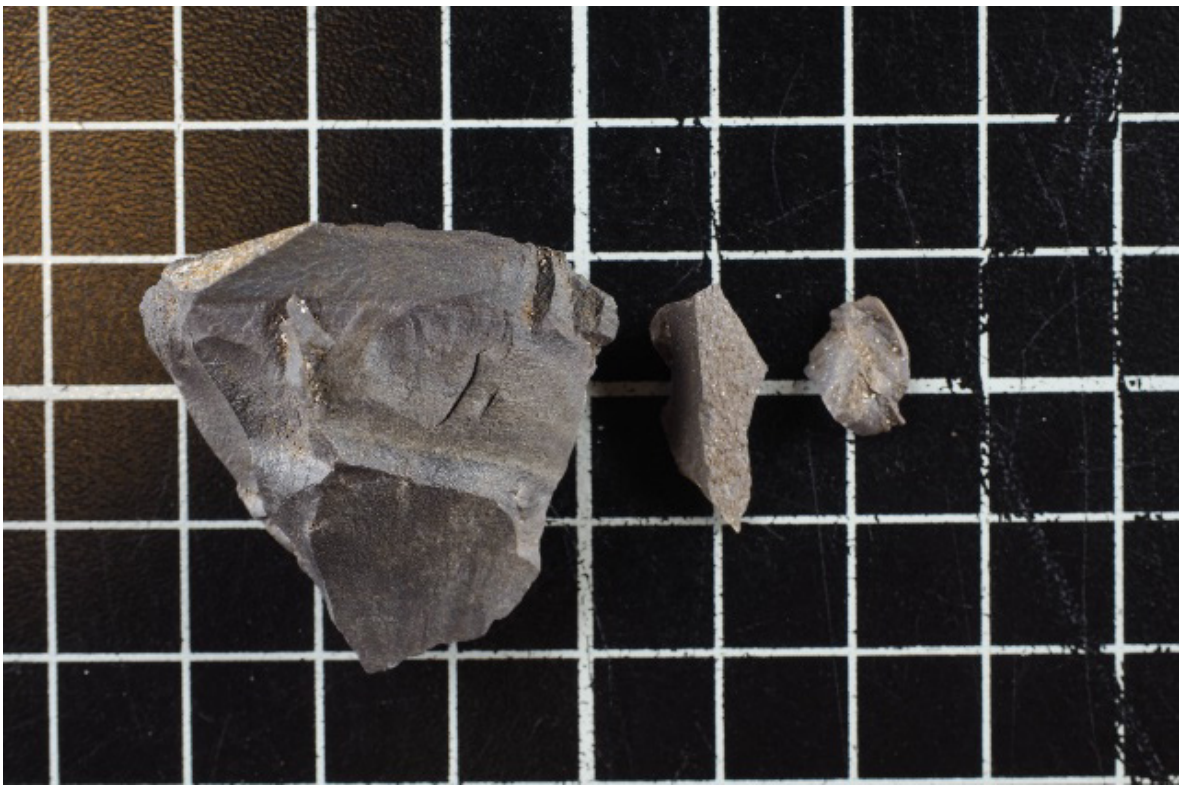


Figure 14. The only finds from the entire trench. Three worked chert fragments found inside the western edge of the floor area of House 5 (14x,10y, square D, 33 cm BS). Photo: EKJ.

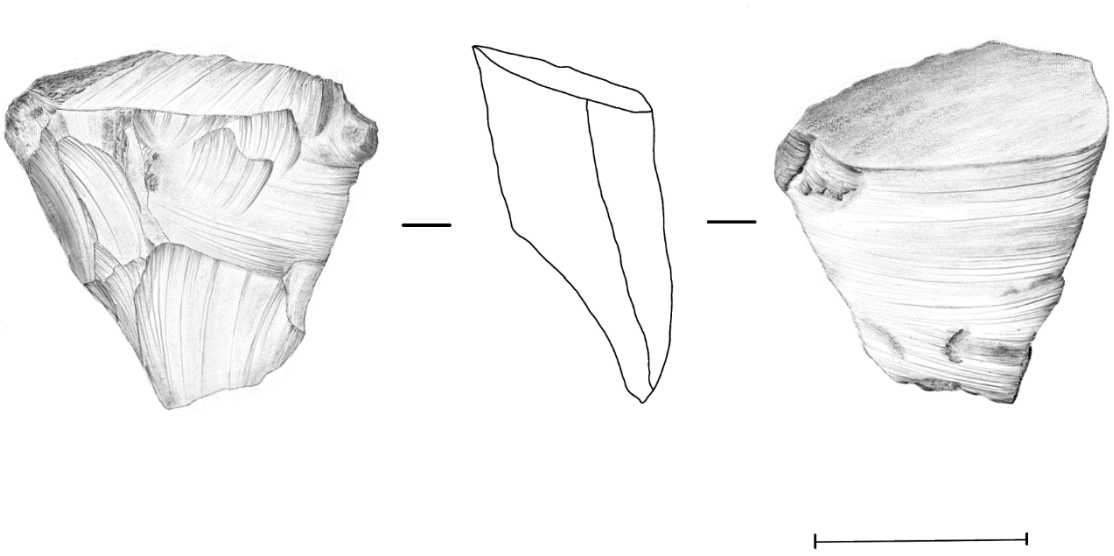


Figure 15. Drawing of find nr 3. By Eirik Haug Røe.

It should be noted that the quality of the larger flake is markedly different above and below the quartz vein running through its middle. The upper, proximal end is more slate-like, while the lower, distal end is more chert-like. This results in somewhat different negative imprinting from working. Minor negative blade-like imprints are visible at the distal end (Fig.14). However, the flake may be nothing more than just a flake – with variable negatives resulting from the heterogenous quality.

6 Results

The results of the investigation are given as direct replies to the research questions posed at the beginning of this report:

- To look for stratigraphically identifiable features useful for the understanding of house contemporaneity and the identification of multiple occupation phases.
    - Result: No stratigraphic evidence was uncovered that could support sediment spill into the neighboring house. We are not able to evaluate the order of construction between the two houses based on our excavation. Except for the stratigraphical feature (x) which seems to indicate reuse of House 4 at a later stage, the stratigraphy seemed uniformly shared amongst the two houses. Although impossible to tell from the scant data available, it may be indicated that the two houses were constructed in close temporal proximity – possibly simultaneously. A more extensive excavation and direct dating of occupation phases is needed to test this.
- To look for the preservation of organics, such as bone/wood tools or organic refuse.

    - Result: No organic remains were uncovered, although our investigation does not preclude the possibility of finding such remains at a later stage. The preservative conditions at the site could potentially be of interest. However, the sand is most likely of an aeolian origin and not direct beach deposit, reducing the potential contend of basic elements from crushed shells and corrals.
- To identify datable material from multiple horizons within each house.
    - Result: Two samples for radiocarbon dating were extracted from the same hearth feature in house 4, as these were the only samples in a condition suitable for sampling. The charcoal was highly degraded and we had to go with the samples in lack of other alternatives. Multiple horizons were not identifiable. Yet dating results may indicate closely spaced occupational events of the house.
- To relate the potential inventory to stratigraphic units and direct dates.
    - Result: No diagnostic finds were made, and the few finds that were uncovered were unfortunately not related to any distinct stratigraphical horizon. What is more, the lithics stem from the house from which no datable material was extracted, preventing us from relating the finds to the age of the house. They were also located below the floor plan of the house, and both stratigraphically and typologically seem to pre-date the house.
- The trench was positioned halfway into what looked like a possible depression connecting the two houses, as we wanted to investigate whether this feature visible at the surface had any association to sub-surface stratigraphical properties.
    - Result: It turned out that no impact of this depression was visible while excavating, suggesting that it was only a surface feature unrelated to the actual architectural layout of the houses – thus not an actual structural connection between the houses.

7 Discussion and concluding remarks

Despite the minor investigation presented here ($3m^2$ trench) and its limited representativity of the site complex, it is interesting to note the near-lack of finds both inside, between and outside the houses (test pits). Although it is not uncommon for YSA house pits to contain fairly inventories, a mere total of three finds when excavating a trench across two habitation structures is uncommon.

Although some of the most iconic YSA sites in Finnmark (Gropbakkeengen) are situated on top of similar glaciofluvial terraces with steep slopes directly into the sea level of the past, this is not overly frequent. In contrast, most sites location factors seem to prioritize shore-boundedness and direct access to waterfront. Although glaciofluvial deltas are particularly suitable for habitation, their formation history mostly stemming from

terminal ice age drainage channels and fluvial deposits into pre-boreal and initial Holocene sea-levels, resulting in elevations closer to the marine limit and has therefore mostly been thought less attractive to Boreal and Atlantic settlements from the YSA. In addition, their late glacial formation has provided enough time for most deltas to be thoroughly covered by bogs and vegetation, substantially decreasing archaeological visibility. The north Norwegian coastal landscape is rich in such deltas, and could benefit from direct targeting through test pitting, particularly looking for pioneer and OSA presence, which should be most likely encountered.

Nonetheless, an interesting case of comparison with the Store Sandvika site is the Gropbakkeengen site complex in inner Varanger fjord, Eastern Finnmark. Here, a large number (approx. 100) habitation structures are positioned on top a similar delta terrace, with indications of use while the terrace was far elevated above the contemporary sea level.

At Gropbakkeengen, some houses (-2 and -3) are positioned at the very edge of the current terrace edge and have been partially eroded due to landslide events post-dating their construction. This observation highlights the dynamic nature of unconsolidated deposits aggregated into steep delta terraces which poses the question of potential erosion of whole structures both at Store Sandvika, Gropbakkeengen, Gressbakken and Nyelv.

Store Sandvika the lower cluster of houses are positioned at the very terrace brink. Although this may have been intentional, we cannot rule out the possibility that parts of the front terrace have collapsed post habitation, due to wave erosion.

Concerning the very low density of finds at Store Sandvika, we may also benefit from some comparison with the Gropbakkeengen site complex. Unfortunately, no larger area outside or between houses has been excavated there. However, one of the very few excavated areas directly outside houses at Gropbakkeengen, a test trench through the partially eroded house -2, discovered a refuse midden containing preserved organic material (shells, animal bones etc.) (Simonsen 1961:154). This is against expectations as one might have anticipated waste management practices to dump refuse straight over the terrace edge and into the sea. Still, the midden did not seem to contain any lithic debitage, a material category documented in the ethnographic record to often being subject to particular depositional practices as it may be considered high-risk waste if laying about (Clark 1991).

In support of the reality of such waste management practices, the excavation of a larger area between Slettnes IVB and IVA that cut across a steep, uninhabitable slope uncovered large quantities of finds (Hesjedal et al. 1996:67). Judging by the lithic assemblage it seems like the high number of bipolar cores both in the slope trench and at the higher elevated

IVA site, are associated. This implies that material has been transported (intentionally or by post-depositional, fluvial or mechanical processes) down the slope - which is to be expected (cf. Jørgensen 2017:169).

Although too early to tell, it is reasonable to assume that a potential explanation for the lack of finds during our investigation for the habitation structures at Store Sandvika, could be the site-specific waste management practices at high-elevation sites directly above standing water.

As our investigation was very limited, it is suggested that future investigations should target larger parts of the internal house floor areas and extend trenches both into the open surface behind the houses, as well as some distance across the edge and down the slope to look for activity areas and remains outside the houses.

Based on our observations and findings, it is necessary to excavate well below the house floor to get a more complete picture of stratigraphy and find distribution. The main objective of any future investigation should be to test propositions of house age and contemporaneity, as we were unable to fully establish this. This could be done by obtaining datable material from house 5, which is currently undated.

Bibliography

Clark, John (1991). Flintknapping and debitage disposal among the Lacandon Maya of Chiapas, Mexico. In *The Ethnoarchaeology of Refuse Disposal*, edited by Edward Staski and Sutro Livingston.

Damm, Charlotte Brysting, Marianne Skandfer, and Peter D. Jordan (2021). Peopling Prehistoric Coastlines: Identifying Mid-Holocene Forager Settlement Strategies in Northern Norway. *Journal of Maritime Archaeology*. https://doi.org/10.1007/s11457-021-09316-x

Hesjedal, Anders, Charlotte Damm, Bjørnar Olsen, and Inger Storli (1996). *Arkeologi på Slettnes: dokumentasjon av 11.000 års bosetning*. Tromsø Museums Skrifter XXVI. Tromsø museum, Tromsø.

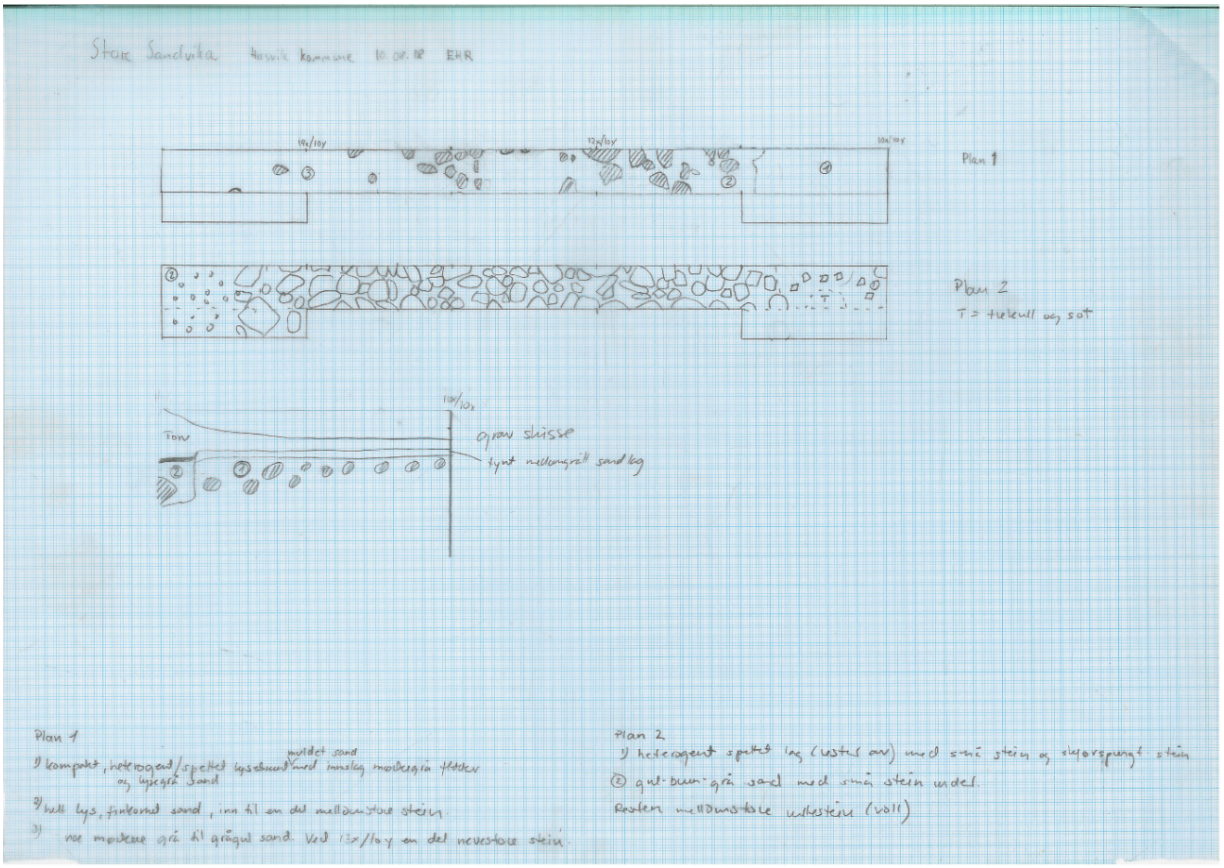
Jørgensen, Erlend Kirkeng (2017). Om vegetasjonsforstyrrelser: Konsekvenser for bevaringen av arkeologisk kontekstinformasjon i norske jordsmonn. *Viking* 80(0):157–180. https://doi.org/10.5617/viking.5477

Jørgensen, Erlend Kirkeng, and Felix Riede (2019). Convergent catastrophes and the termination of the Arctic Norwegian Stone Age: A multi-proxy assessment of the demographic and adaptive responses of mid-Holocene collectors to biophysical forcing. *The Holocene* 29(11):1782–1800. https://doi.org/10.1177/0959683619862036

Retallack, Gregory J. (2001). *Soils of the Past*. 2 edition. Wiley-Blackwell, Oxford ; Malden, MA. https://doi.org/10.1002/9780470698716

Simonsen, Povl (1961). *Varanger-funnene II Fund og udgravninger på fjordens sydkyst*. Tromsø Museums Skrifter II. Tromsø Museum, Tromsø.

Appendix 1. Plan and profile drawing



Appendix 2. Detailed site and feature descriptions

Reg.No.(R/K, ID.no.)		**Site name**	**GPS-coordinates**		**Date/signed**		
221255		**Store Sandvika**	**N** **E**				
Dwelling no.	Int. Measur.	Wall widths	Floor depths (from top of wall and sur.terrain))	Orientation	Masl	Form	Excavated?
CPOS: T1	4,70 x 2,60	N 1,00 E S 1,50 W 1,10	10 / 10	ØV	29,0	rekt	N
Other information: Lyngbevolst med gress/vier. Flere store stein i voll mot sør (evt sekundære?). Lav forsenkning med flere bevokste blokker inne. Fin flate i forkant ned mot de øvrige tufter. Mulig, men relativ overbevisende tuft.							
Dwelling no.	Int. Measur.	Wall widths	Floor depths (from top of wall and sur.terrain))	Orientation	Masl	Form	Excavated?
CPOS: T2	4,00 x 3,30	N - E 1,70 S 2,3 W 1,80	15 / 30	ØV	26,65	Rund	N
Other information: Rett S av større blokkstein i lyng med gress inni. Tydelig nedgrsavd i Ø og S, lite markert i N, der den store steinen ligger. Utflytende i Ø. Smal utgang imot S, midt i frontveggen, ca 70 cm bred. Mulig utgang i SV-hjørne, rett ved store stein, utgang ca 70 cm bred.							

Dwelling no. CPOS: T3	Int. Measur. 2,9 x 2,1	Wall widths N 1,10 E 0,80 S 1,7 W 1,30	Floor depths (from top of wall and sur.terrain)) 53 / 48	Orientation ØV	Masl 25,55	Form Rund	Excavated? N
Other information: Lengst vest på fremste terrasse i lyngmark med gress inni. Kraftig nedgravning i alle himmelretninger. Lave voller, utflytende. Tydelig forsenkning midt på veggen i V-vegg, bredde 110 cm. Indre area ca 4 m fra S-kant av terrassen. Mulige utganger, (svake forsenkninger) på S- og V-vegg, ca 0,7 m brede.							
Dwelling no. CPOS:T4	Int. Measur. 4,8 x 3,2	Wall widths N 1,60 E 1,60 S 1,50 W 1,50	Floor depths (from top of wall and sur.terrain)) / 78	Orientation ØV	Masl 25,25	Form rund	Excavated? N
Other information: Rett N-vegg, pæreformet indre. Muligens veggmasse fra T5 som har blitt dumpet inn i t4. Tydelige voller på alle sider. Nedsenkning minst i v-vegg ca 90 cm og i NØ-hjørne. Pgra innrasing fra T5 kan denne ha vært rektangulær. Vegetasjon som T3, 3,5 m lenger Ø langs terrassekanten							

Reg.No.(R/K, ID.no.)		**Site name**	**GPS-coordinates** **N** **E**		**Date/signed**		
Dwelling no.	Int. Measur.	Wall widths	Floor depths (from top of wall and sur.terrain))	Orientation	Masl	Form	Excavated?

CPOS: T5	2,9 x 2,0	N 3,3 E 0,9 S 1,8 W 1,60	70 / 38	ØSØ-VNV	24,48	Oval-rekt	N
Other information: Ligger helt ute på terrasekanten og trolig er veggvollen mot V lagt inn og delvis inn over T4. Tydelig nedgravd i alle sider, noe utflytende veggvoller. Rett S-vegg m hjørner. Mulig inngang i S-hjørne, mer usikker forsenkning/utgang i V-hjørne inn i T4.							
Dwelling no.	Int. Measur.	Wall widths	Floor depths (from top of wall and sur.terrain))	Orientation	Masl	Form	Excavated?
CPOS: T6	3,5 x 2,2	N E 2,40 S 1,8 W 2,80	83 /65	ØSØ-VNV	24,98	rekt	N
Other information: Tydelig voll, i bakkant av terrasse. Ingen voll i bakkant, lagt inn mot bergrygg i Ø, mulig inngang i V-hjørne, ca 1 m bred.							

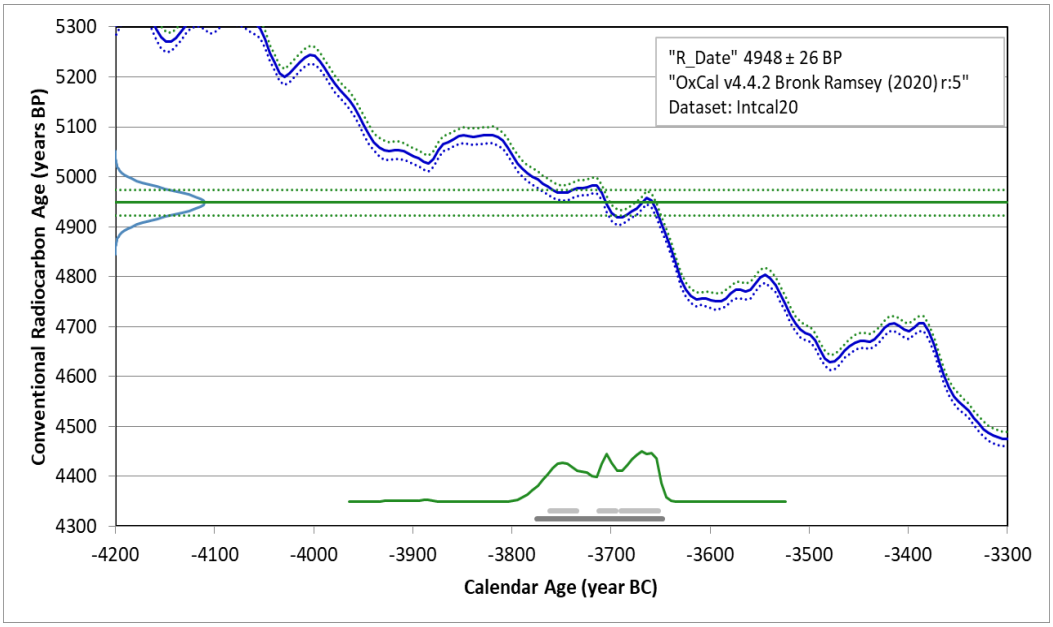
Appendix 3. Dating calibration curve diagrams

TRa-16096

Ts16057 p47.3

1 Betula; lag 1, i ildsted.
Sampling location: Store Sandvika, Hasvik k., Finnmark f.
Context: Arkeologisk utgravning (2018), sjakt gjennom hustfuft (steinalder)

Fraction	14C content (pMC)	14C Age BP (rounded)	d13C (from AMS system)	Calibrated Age Ranges		14C Age (not rounded)
				68.3%	probability	
				3764BC 3736BC	(20.3%)	
				3714BC 3696BC	(14.5%)	
				3691BC 3654BC	(33.5%)	
				95.4%	probability	
Trekull. 1 bit Betula. Ingen rest. Fjerner røtter.,Alkali residue	54.01 ± 0.17	4950 ± 25	-23.3 ± 0.7 ‰	3777BC 3650BC	(95.4%)	4950 ± 25



https://doi.org/10.7557/7.XXXX, *Septentrio Reports* 3 (2021) «Stone Age Demographics»

TRa-16095

Ts16057 p10.4

1 Betula; lag 1, under stein.
Sampling location: Store Sandvika, Hasvik k., Finnmark f.
Context: Arkeologisk utgravning (2018), sjakt gjennom hustfuft (steinalder)

Fraction	14C content (pMC)	14C Age BP (rounded)	d13C (from AMS system)	Calibrated Age Ranges	14C Age (not rounded)
				68.3% probability	
				3648BC (68.3%) 3635BC	
				95.4% probability	
				3698BC (1.0%) 3693BC	
Trekull. 1 bit Betula. Ingen				3655BC (82.8%)	
rest.,Alkali residue	54.66 ± 0.13	4855 ± 20	-26.1 ± 0.2 ‰	3629BC 3557BC (11.6%) 3537BC	4855 ± 20