

**BURGI GEOS**  
Shetland Islands

A Ge archaeological Evaluation of Sedimentary Block Samples

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## Introduction

As part of an archaeological evaluation carried out by Extreme Archaeology a total of two soil block samples were taken from a stratigraphic section exposed in a trench across a section of a dyke at the site of Burgi Geos in the Shetland Islands. The aim of the stratigraphic sampling was to provide a more detailed description of the different sedimentary units and to look for evidence of beach sand that could have been transported to the site to be used in the construction of the feature.

## Methods

The soil block samples were taken on site by the supervising archaeologist and were then sealed and transported to the MoLSS Environmental laboratories. Once at the laboratories the samples were described to standard sedimentary criteria (e.g. Jones *et al*, 1999).

## Results

The soil blocks were understood to be parts of a continuous vertical sample and the contexts were assigned from the section drawing provided. The results of the sedimentary analysis are as follows (from basal units upward):

<b>Burgi Geos</b>			
<b>Depth (OD)</b>	<b>Sed. Unit</b>	<b>Context No</b>	<b>Description</b>
39 to 36 cm.	A	104	10YR 4/1 Dark grey gritty silty sand consisting of frequent mica flakes and moderately frequent granular mica, quartz and feldspar; very occasional clasts of weathered granite; poorly sorted; undulating, horizontal boundary with unit above.
36 to 32cm	B	103	10 YR 3/1 Very dark grey organic rich fine grained layer with numerous fine roots (turf?), with very frequent mica flakes and moderately frequent granular mica, quartz and feldspar; moderately poorly sorted; horizontal contact with unit above.
32 to 30cm	C	103	10YR 4/1 Dark grey gritty silty sand consisting of frequent mica flakes and moderately frequent granular mica, quartz and feldspar; very occasional clasts of weathered granite; poorly sorted; undulating, steeply sloping boundary with unit above.
30 to 29cm	D	102	10 YR 3/1 Very dark grey organic rich fine grained layer with numerous fine roots (turf?), with very frequent mica flakes and moderately frequent granular mica, quartz and feldspar; moderately poorly sorted. Steeply sloping contact with unit above.

29 to 25cm	E	102	10YR 4/1 Dark grey gritty silty sand consisting of frequent mica flakes and moderately frequent granular mica, quartz and feldspar; very occasional clasts of weathered granite; poorly sorted. TOP OF LOWER SOIL BLOCK
25 to 23cm	F	101	10 YR 3/1 Very dark grey organic rich fine grained layer with numerous fine roots (turf?), with very frequent mica flakes and moderately frequent granular mica, quartz and feldspar; moderately poorly sorted. Gently sloping contact with unit above.
23 to 21cm	G	101	10YR 4/1 Dark grey gritty silty sand consisting of frequent mica flakes and moderately frequent granular mica, quartz and feldspar; very occasional clasts of weathered granite; poorly sorted; moderately steeply sloping boundary with unit above.
21 to 13 cm	H	101	10 YR 3/1 Very dark grey organic rich fine grained layer with numerous fine roots and possible grass (turf), with very frequent mica flakes and moderately frequent granular mica, quartz and feldspar; moderately poorly sorted. Steeply sloping contact with unit above.
13 to 5cm	I	100	10YR 4/1 Dark grey gritty silty sand consisting of frequent mica flakes and moderately frequent granular mica, quartz and feldspar; very occasional clasts of weathered granite; poorly sorted; undulating boundary with unit above.
5cm to top	J	100	10 YR 3/1 Very dark grey organic rich fine grained layer with numerous fine roots and grass (turf), with very frequent mica flakes and moderately frequent granular mica, quartz and feldspar; moderately poorly sorted. TOP OF UPPER SOIL BLOCK.

## Interpretation

The sedimentary units in this profile are essentially repetitive in nature: organic rich sedimentary units separate each gritty silty sand unit.

The organic units (for example, Units H and J) are considered to be turves as proposed in the section drawing. Some of the buried turf layers even seem to have grass still in evidence. Varying degrees of bioturbation have mixed these units with the sediments above and below them introducing such minerals as mica although they tend to remain, on the whole, distinctively organic wherever they appear throughout the profile. The fine sand within these units could be wind blown. The differences in slope of contact could reflect the nature of the surface upon which they were laid or subsequent movement / compression of the sediments as a whole.

The other, gritty silty sand based units (for example G and I) seem predominantly to be derived from the weathering of the local granite. The minerals of granite exist throughout these units with the most obvious being the ubiquitous mica flakes as these are visible to the naked eye. The sand matrix of this unit is probably simply due therefore to the weathering of the granite locally as sand is derived primarily from quartz which is the main constituent of granite. It is true however, that all the minerals in these sandy layers can be found in beach sand and added to this, the quartz grains appear sub-rounded under the microscope. It is difficult therefore to entirely exclude the idea that beach sands are used in these deposits however it must be stressed that the poor sorting and the inclusion of pieces of weathered granite in these sediments (as also seen in the sample of context 102) does suggest that these sandy sediments are locally derived.

## **Conclusion**

The soil block samples exhibit alternating layers of oorganic rich sedimentary units separate gritty silty sand based units. The organic rich layers have been interpreted as turf layers. The sand based units are interpreted as locally derived sediments of weathered granite.

## **Bibliography**

Jones, AP, Tucker, ME, and Hart, JH, 1999 *The description and analysis of Quaternary stratigraphic field sections* Technical Guide No.7, Quaternary Research Association, London