Late Pleistocene

[Diagram with detailed geological layers and sections, including:
- Age markers (0.000 to 1.000)
- Magnetic susceptibility (SI)
- GRA bulk density (g/cm³)
- Matrix alteration intensity
- Matrix sorting (Cobbles, Pebbles, Granules, Very coarse sand, Coarse sand, Medium sand, Fine medium sand, Fine sand, Fine mud, Silt-fine mud, Very fine mud)
- Clast type percentage (%)
- Depth (CSF-A m)
- Core length (cm)
- Drilling disturbance

Mostly mottled hemipelagic sediments intercalated with volcaniclastic sand layers and/or turbidites.]

Hole 340-U1395A-1H Section 1, Top of Section: 0.000 CSF-A (m)
| Sample     | Top [cm] | Bottom [cm] | Top Depth [m] | Bottom Depth [m] | Groundmass percentage [%] | Groundmass modal grain size [mm] | Volcanic grain [%] | Volcanic grain modal size [mm] | Biogenic grain [%] | Mineral grain [%] | Mineral grain modal size [mm] | Lithic grain [%] | Lithic grain modal size [mm] | Olivine present [%] | Olivine size MIN [mm] | Olivine shape | Olivine habit | Olivine special features | Plagioclase present [%] | Plagioclase size MAX [mm] | Plagioclase shape | Plagioclase habit | Plagioclase comments | Clinopyroxene present [%] | Clinopyroxene size MAX [mm] | Clinopyroxene shape | Clinopyroxene habit | Clinopyroxene special features | Orthopyroxene present [%] | Orthopyroxene size MAX [mm] | Orthopyroxene shape | Orthopyroxene habit | Orthopyroxene comments | Amphibolite present [%] | Amphibolite size MAX [mm] | Amphibolite shape | Amphibolite habit | Amphibolite comments | Oxides present [%] | Oxides size MAX [mm] | Oxides shape | Oxides habit | Oxides comments | Quartz present [%] | Quartz size MAX [mm] | Quartz shape | Quartz habit | Quartz comments |
|------------|----------|-------------|--------------|-----------------|---------------------------|----------------------------|-----------------|-------------------------------|-----------------|----------------|--------------------------------|----------------|----------------------------|---------------------|------------------------|----------------|----------------|--------------------------------|---------------------|------------------------|----------------|----------------|--------------------------|---------------------|------------------------|----------------|----------------|------------------------|---------------------|------------------------|----------------|----------------|------------------------|---------------------|------------------------|----------------|----------------|------------------------|---------------------|------------------------|----------------|----------------|------------------------|
Approximately a 1m thick mixed bioclastic/volcaniclastic turbidite within hemipelagic sediments.
Hemipelagic sediments with two turbidite sands, one carbonate, the other mixed volcanioclastic-bioclastic sand.
Mixed volcanioclastic-bioclastic sand. Bioturbated and disturbed.
Late Pleistocene

Magnetic susceptibility (SI)

GRA

bulk density (g/cm³)

3

2

1

0

High

Moderate

Rare

Absent

Matrix alteration intensity

Matrix sorting

Cobbles

Pebbles

Granules

Very coarse sand

Coarse sand

Medium sand

Fine medium sand

Fine sand

Fine mud

Silt-fine mud

Very fine mud

MIN lith grain size

MAJ lith grain size

Clast type %

Pebbles or coarser

Granules

Very coarse sand

Coarse sand

Medium sand

Fine medium sand

Fine sand

Very fine sand

Silt-fine sand

Fine mud

Lab Revisions

Depth CSF-A (m)

Core length (cm)

Drilling disturbance

Core image

Depth CSF-A (m)

Hole 340-U1395A-2H Section 1

Mottled, grey colored hemipelagic sediments, top 15 cm depth is occupied by volcaniclastic turbidite.

Top of Section: 3.1 CSF-A (m)
Hemipelagic sediments with two units of volcaniclastic turbidites.
Two thin mixed volcaniclastic-bioclastic turbidites overlying a thick hemipelagic sediment.
Late Pleistocene

Age

Magnetic susceptibility (SI)

GRA

bulk density (g/cm³)

High
Moderate
Rare
Absent

Matrix alteration intensity

Matrix sorting

Cobbles
Pebbles
Granules
Very coarse sand
Coarse sand
Medium sand
Fine medium sand
Fine sand
Fine mud
Silt-fine mud
Very fine mud

MIN lith grain size

MAJ lith grain size

Clast type %

Pebbles or coarser
Granules
Very coarse sand
Coarse sand
Medium sand
Fine medium sand
Fine sand
Very fine sand
Silt-fine sand
Fine mud

Core image

Depth CSF-A (m)

Core length (cm)

Drilling disturbance

Shipboard samples

Hemipelagic sediments interbedded with mixed volcaniclastic-bioclastic turbidites.

Hemipelagic clasts

The base of the Cretaceous

Hemipelagic sediments

Hemipelagic clasts

The base of the Cretaceous

Hemipelagic clasts
Predominantly volcaniclastic and mixed volcaniclastic/bioclastic turbidites, with thin hemipelagic sediments interbedded.

Hole 340-U1395A-2H Section 6, Top of Section: 10.6 CSF-A (m)
Two volcaniclastic turbidites, with very minor component of carbonate material.
Poorly to moderately sorted volcaniclastic turbidites.

- Pod of hemipelagic
  - Volcaniclastic turbidite
  - Average grain size: Medium sand

- Grains of lava
  - Volcaniclastic turbidite
  - Massive coarse sand with few grains of lava in the middle part of the sample
Series of stacked volcaniclastic turbidite sands, all with minor bioclastic material. All normally graded and massive. Lower two have more clasts, mostly dense lava.
Volcaniclastic sand with 5% granule clasts of volcanics.
Late Pleistocene

Age (ka)

Magnetic susceptibility (SI)

Grain size

Presence

Clast type %

Core image

Depth CSF-A (m)

Core length (cm)

Drilling disturbance

Matrix sorting

Lithology

Clast type %

Pebbles or coarser

Granules

Very coarse sand

Coarse sand

Medium sand

Fine medium sand

Fine sand

Fine mud

Silt-fine mud

Very fine mud

MIN grain size

MAJ grain size

Mottled, fine grained hemipelagic sediments with thin green layers.

Hole 340-U1395A-4H Section 1, Top of Section: 19.9 CSF-A (m)
Predominantly hemipelagic sediments with two thin mixed volcaniclastic-bioclastic turbidite sands.
Mainly composed of hemipelagic fine sediments.

Graphic log - Average grain size matrix sediment

Mainly composed of hemipelagic fine sediments.
Alternation of hemipelagic sediment and mixture of bioclastic and volcaniclastic materials and occasionally intercalated with volcaniclastics.
Hemipelagic sediments.

- dark grey
- silty to fine sandy hemipelagic deposits
- light grey
- carbonate-rich bed
- grey

**Core length (cm)**

**Depth CSF-A (m)**

**Core image**

**Graphic log - Average grain size matrix sediment**

**MA lith grain size**

**MIN lith grain size**

**Matrix alteration intensity**

**GRA bulk density (g/cm³)**

**Magnetic susceptibility**

**Drilling disturbance**

- Hole 340-U1395A-4H Section 5, Top of Section: 25.93 CSF-A (m)
Thick hemipelagic sediment with a very thin ash layer.
Late Pleistocene

<table>
<thead>
<tr>
<th>Age</th>
<th>Magnetic susceptibility (SI)</th>
<th>Shipboard samples</th>
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</thead>
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<tr>
<td>29.90</td>
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<tr>
<td>29.95</td>
<td>10.0</td>
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</table>

**Matrix alteration intensity**

- High
- Moderate
- Rare
- Absent

**Matrix sorting**

- Cobbles
- Pebbles
- Granules
- Very coarse sand
- Coarse sand
- Medium sand
- Fine medium sand
- Fine sand
- Fine mud
- Silt-fine mud
- Very fine mud

**MIN lith grain size**

- Cobbles
- Pebbles
- Granules
- Very coarse sand
- Coarse sand
- Medium sand
- Fine medium sand
- Fine sand
- Fine mud
- Silt-fine mud
- Very fine mud

**MAJ lith grain size**

- Pebbles or coarser
- Granules
- Very coarse sand
- Coarse sand
- Medium sand
- Fine medium sand
- Fine sand
- Fine mud
- Silt-fine sand
- Fine mud

**Core**

- Image
- Drilling disturbance

**Core length (cm)**

- Depth CSF-A (m)
- Sediment type %

**Hemipelagic sediment.**

Hole 39C-U1395A-4H Section CC, Top of Section: 29.7 CSF-A (m)
Predominantly hemipelagic sediments, some fine sand, with minor carbonate-volcaniclastic turbidite.

Hole 340-U1395A-5H Section 1, Top of Section: 29.4 CSF-A (m)
Silty-muddy hemipelagic sediments with greenish colored bands, and with a potential tephra layer.
Hemipelagic sediments with thin layers of mixed bioclastic and volcaniclastic turbidites.

Hole 340-U1395A-5H Section 3, Top of Section: 32.4 CSF-A (m)
Hemipelagic sediment, one mixed turbidite.
Pale yellowish gray colored hemipelagic carbonate ooze with disperse greenish layers, tiny black organic clasts and sandy patches. Clast content is less than 0.5%.
Hemipelagic sediments with one ashfall layer intercalation.

- Light brown, silty hemipelagic sediments
- Ash fall with bioturbation at the base
- Silty to fine sandy, light grey hemipelagic sediments
- Silty beige to grey hemipelagic sediments
- Green zone
- Dark brown zone
- Light grey sandy hemipelagic sediments
Hemipelagic sediment with a thinly bedded, normally graded sandy turbidite.
Hemipelagic sediment.

<table>
<thead>
<tr>
<th>Age (Ma)</th>
<th>Magnetic susceptibility (SI)</th>
<th>GRA bulk density (g/cm³)</th>
<th>Matrix alteration intensity</th>
</tr>
</thead>
<tbody>
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<td>Absent</td>
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<tr>
<td>39.10</td>
<td>0</td>
<td>2</td>
<td>Moderate</td>
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<tr>
<td>39.05</td>
<td>0</td>
<td>3</td>
<td>High</td>
</tr>
</tbody>
</table>

**Graphic log - Average grain size matrix sediment**

- **MIN lith grain size**
  - Cohesive clasts
  - Very coarse sand
  - Coarse sand
  - Medium sand
  - Fine medium sand
  - Fine sand
  - Fine mud
  - Silt-fine mud
  - Very fine mud

- **MAJ lith grain size**
  - Pebbles or coarser
  - Granules
  - Very coarse sand
  - Coarse sand
  - Medium sand
  - Fine medium sand
  - Fine sand
  - Fine mud
  - Silt-fine sand
  - Fine mud

**Core image**

- **Clast type %**
  - Pebbles or coarser
  - Granules
  - Very coarse sand
  - Coarse sand
  - Medium sand
  - Fine medium sand
  - Fine sand
  - Fine mud
  - Silt-fine sand
  - Fine mud
  - Very fine mud

**Graphic lithology**

- **Core length (cm)**
  - 30

- **Drilling disturbance**
  - Late Pleistocene

- **Core length (cm)**
  - 30

- **Core image**
  - Banded gray to green, silty hemipelagic sediments
Alternating layers of hemipelagic clay and volcaniclastic mud. Significant bioturbation is present.
Alternating layers of hemipelagic clay and volcaniclastic/bioclastic sand.
This is mostly hemipelagic calcareous fine sand, which contains shell fragments. In the upper part of the section from 13 to 18 cm, well sorted silt-fine mud gray layer appears, which could be an ash layer.
Interlayered hemipelagic clay and bioclastic/volcaniclastic sand layers.

Hole 340-U1395A-6H Section 4, Top of Section: 43.43 CSF-A (m)
Upper part is stacked sand, lower part hemipelagite.
Interlayered hemipelagic clay and bioclastic sand units overtopped with fining upward volcaniclastic sand to mud layers.
Turbidite layer is overlain by hemipelagic calcareous ooze. The turbidite continues to 6HCC. Hemipelagic sediment have several colored diffuse layers, which might represent thin ash layers.
Upper part is the base of turbidite, which continues from the upper section 6H7. Below the turbidite, there are volcanic mud and ash layers, which may suggest that turbidites (landslide?) has happened after the eruption and deposition of ash layer.
Homogeneous hemipelagic carbonate ooze with minor amount of biogenic clasts. Thin greenish layers are interbedded at 22 cm and 125 cm.
Early Pleistocene

- Shipboard samples
- Age: 51.40, 51.35, 51.30, 51.25, 51.20, 51.15, 51.10, 51.05, 51.00, 50.95, 50.90, 50.85, 50.80, 50.75, 50.70, 50.65, 50.60, 50.55, 50.50, 50.45, 50.40, 50.35, 50.30, 50.25, 50.20, 50.15, 50.10, 50.05, 50.00, 49.95

- Magnetic susceptibility (SI): 6000, 4000, 2000, 0

- GRA: bulk density (g/cm³): 3, 2, 1, 0

- High, Moderate, Rare, Absent

- Matrix alteration intensity

- Matrix sorting: Cobbles, Pebbles, Granules, Very coarse sand, Coarse sand, Medium sand, Fine medium sand, Fine sand, Fine mud, Silt-fine mud, Very fine mud

- MIN lith: grain size

- MAJ lith: grain size

- Clast type %: Pebbles or coarser, Granules, Very coarse sand, Coarse sand, Medium sand, Fine medium sand, Fine sand, Fine mud, Silt-fine sand, Fine mud

- Graphic log - Average grain size, Matrix sediment

- Graphic lithology

- Core image

- Drilling disturbance

- Core length (cm)

- Depth CSF-A (m)

- Hole 340-U1395A-7H Section 2, Top of Section: 49.9 CSF-A (m)

- Carbonate ooze and interlayered dark gray colored turbidites.
This section consists of three turbidites, which range from 0-10 cm, 10-33 cm and 33-150 cm. The upper two turbidites show dark gray in the bottom and gradually change into gray in color upward. The contents of volcanic materials are most abundant in the bottom and decrease upward, which can explain gradual upward lighter color. It also suggested that the bottom dark gray layer also contain small amount of biogenic materials, which support turbidite origin. These are not ash layers as was thought previously.
Mixture of biogenic calcareous sand and volcaniclastic sand turbidite.

Hole 340-U1395A-7H Section 4, Top of Section: 52.9 CSF-A (m)
Massive bioclastic/volcanoclastic layer.

**Graphic log - Average grain size**

| Depth (CSF-A m) | Core length (cm) | Core image | Graphic lithology | GRA | GRA Bulk density (g/cm³) | GRA Magnetic susceptibility (SI) | GRA Matrix alteration intensity | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size | MAJ lith grain size |
|----------------|------------------|------------|-------------------|-----|-------------------------|-------------------------------|--------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 54.45          | 46               |            |                   |     |                         |                               |                                |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                |

*All of section heterogenous turbidite sand. Medium grey with occasional shell fragments, ungraded? flows.*
Massive bioclastic/volcaniclastic sand unit.

Hole 340-U1395A-7H Section 6, Top of Section: 55.48 CSF-A (m)
Early Pleistocene

<table>
<thead>
<tr>
<th>Magnetic susceptibility (SI)</th>
<th>GRA bulk density (g/cm³)</th>
<th>Matrix alteration intensity</th>
<th>Matrix sorting</th>
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<th>MIN lith grain size</th>
<th>MAJ lith grain size</th>
<th>Clast type %</th>
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<tbody>
<tr>
<td>Silt-fine sand</td>
<td></td>
<td>Pebbles</td>
</tr>
<tr>
<td>Very fine sand</td>
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<td>Fine mud</td>
<td></td>
<td>Fine medium sand</td>
</tr>
<tr>
<td>Silt-fine mud</td>
<td></td>
<td>Very coarse sand</td>
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</table>

<table>
<thead>
<tr>
<th>Graphic log - Average grain size</th>
<th>Core image</th>
<th>Graphic lithology</th>
<th>Dating method</th>
<th>Dating depth (cm)</th>
<th>Core length (cm)</th>
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<th>Dating method</th>
<th>Dating depth (cm)</th>
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<tr>
<td>Hole 340-U1395A-7H Section CC, Top of Section: 56.98 CSF-A (m)</td>
<td>Massively bioclastic/volcaniclastic sand. PAL sample from base.</td>
<td>340-U1395A-7H</td>
<td>56.98 CSF-A (m)</td>
<td>48</td>
<td>48</td>
<td>56.98 CSF-A (m)</td>
<td>48</td>
<td>56.98 CSF-A (m)</td>
<td>48</td>
<td>56.98 CSF-A (m)</td>
</tr>
</tbody>
</table>
Hemipelagic mud with some shell fragments up to granule size, occasionally black colored sandy pods consisting of coarse shell fragments.
Alternation of carbonate rich hemipelagic mud and calcareous sand. Two mafic ash layers sit in lowermost part.
Top 8 cm is black to dark gray colored well-sorted turbidite and the lower part is hemipelagic sediment.

<table>
<thead>
<tr>
<th>Depth (CSF-A m)</th>
<th>Core length (cm)</th>
<th>Core image</th>
<th>Graphic log - Average grain size matrix sediment</th>
<th>MA lith grain size</th>
<th>MIN lith grain size</th>
<th>Metric alteration intensity</th>
<th>GRA bulk density (g/cm³)</th>
<th>Magnetic susceptibility (SI)</th>
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REM  OF SECTION probably relatively coarse silt with dispersed shell fragments, and therefore hemipelagic.
Hemipelagic clay with significant bioturbation. The burrowing may be responsible for darkening the color of the clay.
Hemipelagic clay with significant bioturbation. Bioturbation may be responsible for introducing material to darken the clay.
One ash layer is recognized from 55.61 cm, which is dark gray in color and stands out from underlying light gray color turbidites. The upper part and lower part of the section consist of turbidites; three turbidites below the ash layer and one turbidite on the ash layer.
Hemipelagic sediments interlayered with bioclastic turbidites and tephra. At 52-53 cm thin basaltic scoriaceous tephra is embedded. At 110 cm there is a very sharp boundary. Hemipelagic sediment is covered by mafic tephra and turbidite. This boundary must be a very good key marker.
Hemipelagic sediment interlayered with turbidites. At 50 cm, there is a sharp boundary which is separated by a turbidite with typical normal grading.
Hemipelagic clay with several thin black fine mud layers (ashes?) and one well sorted granule layer (fallout) plus thin turbidites.
Early Pleistocene

**Shipboard samples**

**Age**

**Magnetic susceptibility (SI)**

**GRA**

**bulk density (g/cm³)**

- 3
- 2
- 1
- 0

**Matrix alteration intensity**

- High
- Moderate
- Rare
- Absent

**Matrix sorting**

- Cobble
- Pebbles
- Granules
- Very coarse sand
- Coarse sand
- Medium sand
- Fine medium sand
- Fine sand
- Fine mud
- Silt-fine mud
- Very fine mud

**MIN lith grain size**

**MAJ lith grain size**

**Clast type %**

- Pebbles or coarser
- Granules
- Very coarse sand
- Coarse sand
- Medium sand
- Fine medium sand
- Fine sand
- Fine mud
- Silt-fine sand
- Very fine sand

**Graphic log**

**Average grain size**

**Matrix sediment**

**Graphic lithology**

**Core image**

**Drilling disturbance**

- Core length (cm)
- Depth CSF-A (m)

Interlayered hemipelagic clay and volcaniclastic mud. The hemipelagic clay and mud are often intimately mixed leading to darker clay bands. Significant bioturbation is present.
Interbedded hemipelagic ooze and volcaniclastic turbidite in various matrix contents. Three successions of normal graded volcaniclastic turbidite.
Hemipelagic clay with significant bioturbation. Darker colored lenses may reflect bioturbation or diffuse glauconite layers.
Hemipelagic clay with significant bioturbation. PAL sample from base of section.
Upper part of thick turbidite. Pebble sized pumice and silt-mud clasts look concentrated in the top of the turbidite. This is covered by a fine grained layer and a thin turbidite.


Core length (cm) vs. Depth (CSF-A m)

- Hole 340-U1395A, Site 1395, ODP Leg 307, 2006
- Core image
- Drilling disturbance
- Depth CSF-A (m)
- Core length (cm)

Clast type %
- Pebbles or coarser
- Granules
- Very coarse sand
- Coarse sand
- Medium sand
- Fine medium sand
- Fine sand
- Very fine sand
- Silt-fine sand
- Fine mud
- Silt-fine mud
- Very fine mud

Matrix sorting
- Poor
- Fair
- Good
- Excellent
- Excellent

Matrix alteration intensity
- Low
- Moderate
- High

Graphic log - Average grain size matrix sediment

Graphic lithology
This section is a middle part of one massive turbidite, which continues from lower section and continues upward to higher section. Pumice clasts concentrate at the top of the turbidite in upper section, and the lower boundary of the turbidite, which is observed in the lower section seems eroded the lower layer. Most part of the turbidite consist of ill-sorted coarse sand, containing small amount of small pebbles of rounded andesite lava fragments.
Successive turbidites interlayered with hemipelagic sediments.
Hemipelagic mud with two dark silts.
Interlayered hemipelagic mud, some intimately mixed with volcaniclastic mud, and volcaniclastic mud layers. Significant bioturbation.
Interlayered hemipelagic clay and darker volcaniclastic mud/hemipelagic clay unit. Significant bioturbation present in some layers.

<table>
<thead>
<tr>
<th>Depth (CSF-A m)</th>
<th>Core length (cm)</th>
<th>Core image</th>
<th>Graphic log - Average grain size (matrix sediment)</th>
<th>MA/Jh grain size</th>
<th>MIN lith grain size</th>
<th>Matrix alteration intensity</th>
<th>GRA bulk density (g/cm³)</th>
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</table>

**Graphic lithology**

- Most likely rather sandy hemipelagic, with shell fragments.
- Brown clay
This section is mostly composed of four sets of turbidites fining upward from very fine sand at the bottom and fining upward, mostly silt-fine mud. From 14.5-71 cm, no clear grading is observed (massive sand). This part is a mixture of volcanic and biogenic materials. The volcanic mud at the base of the section (124-150 cm) is an upper part of turbidite, whose lower part is observed in the next section 2-A.
This section has four sets of turbidites; hemipelagic sand and hemipelagic mud sits between these turbidites at 22-69 cm and 88-98 cm. The turbidite from 98-150 cm continues to the next section. It is a beautiful sequence grading upward from medium sand through fine sand, very fine sand, silt to very fine mud.
Five successions of volcaniclastic turbidites and hemipelagic carbonate ooze. A well sorted coarser-grained ash layer (tephra, which contains plagioclase and amphibole crystals) is observed at 87 cm.
Hemipelagic clay containing a diffuse volcaniclastic mud or ash layer at section base. Top of section is a volcaniclastic fall or turbidite deposit which fines upward from coarse sand to mud.
Hemipelagic clay with massive bioturbation interlayered with a fining upward volcaniclastic turbidite sequence and a diffuse volcaniclastic mud or ash layer.
Hemipelagic sediments interlayered with volcaniclastic and bioclastic turbidites.

Hole 340-U1395A-11H Section 6, Top of Section: 87.95 CSF-A (m)

- **Core length (cm)**
- **Depth CSF-A (m)**
- **Core image**
- **Graphic lithology**
- **Graphic log - Average grain size matrix sediment**
- **MA/Jh grain size**
- **MIN/Jh grain size**
- **Matrix alteration intensity**
- **GRA bulk density (g/cm³)**
- **Magnetic susceptibility (SI)**
- **Drilling disturbance**
- **Core image**
- **Depth CSF-A (m)**

**Clast type %**
- Pebbles or coarser
- Granules
- Very coarse sand
- Coarse sand
- Medium sand
- Fine medium sand
- Fine sand
- Fine mud
- Silt-fine mud
- Very fine mud

**MIN lithology**

**MAJ lithology**

**Graphic log - Average grain size matrix sediment**

- Hemipelagic sediments interlayered with volcaniclastic and bioclastic turbidites.
Hemipelagic clay showing massive bioturbation bracketing a fining upward volcaniclastic turbidite unit. Void at section base.
Early Pleistocene

<table>
<thead>
<tr>
<th>Core length (cm)</th>
<th>Core image</th>
<th>Graphic lithology</th>
<th>Graphic log - Average grain size matrix sediment</th>
<th>MAj lith grain size</th>
<th>MIN lith grain size</th>
<th>Matrix alteration intensity</th>
<th>GRA bulk density (g/cm³)</th>
<th>Magnetic susceptibility (SI)</th>
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</table>

Heavily bioturbated volcaniclastic mud with a diffuse volcaniclastic mud or ash layer interlayered. PAL sample taken from base.
Uppermost part is a strongly bioturbated hemipelagic carbonate ooze. It is followed by a succession of volcaniclastic turbidites. Each sequence gradually varies from lower volcaniclast rich to upper carbonate ooze rich parts.
Hemipelagic sediments interlayered by at least three crystal-rich tephra layers and turbidites.
Hemipelagic sediments intercalated with laminated mixture of bioclastic and volcaniclastic turbidite layers.

Hole 340-U1395A 001 Section 3, Top of Section: 92.9 CSF-A (m)
Early Pleistocene

Shipboard samples

Age
Magnetic susceptibility (SI)
GRA
bulk density (g/cm³)

High
Moderate
Rare
Absent

Matrix alteration intensity
Matrix sorting

Cobbles
Pebbles
Granules
Very coarse sand
Coarse sand
Medium sand
Fine medium sand
Fine sand
Fine mud
Silt-fine mud
Very fine mud

MIN lith grain size
MAJ lith grain size
Clast type %

Pebbles or coarser
Granules
Very coarse sand
Coarse sand
Medium sand
Fine medium sand
Fine sand
Very fine sand
Silt-fine sand
Fine mud

No clear turbidite is observed in this section. This section consists of alternation of volcanic sand and mud and mostly hemipelagic sand and mud.

Hole 340-U1395A-12H Section 4, Top of Section: 94.41 CSF-A (m)
Hemipelagic sediments with a couple of intercalations of volcaniclastic and mixed turbidites.

Hole 340-U1395A-12H Section 5, Top of Section: 95.91 CSF-A (m)
Hemipelagic fines with intercalations of volcaniclastic turbidite with one crystal rich ashfall layer.
Predominantly hemipelagic sediments with two stacked turbidites atop and a thin ash layer.

Hole 340-U1395A-12H Section 7, Top of Section: 98.92 CSF-A (m)

- Clast type %
  - Pebbles or coarser
  - Granules
  - Very coarse sand
  - Coarse sand
  - Medium sand
  - Fine medium sand
  - Fine sand
  - Very fine sand
  - Silt-fine sand
  - Fine mud
  - Silt-fine mud
  - Very fine mud

- Graphic log - Average grain size matrix sediment

- Graphic lithology

- Core image

- Drilling disturbance

- Core length (cm)

- Depth CSF-A (m)

- Early Pleistocene
Interlayered hemipelagic clay with volcaniclastic turbidite. Significant bioturbation is present.
Hemipelagic sediment with a mixed bioclastic-volcaniclastic turbidite.
Silty to sandy mottled hemipelagic sediments intercalated with mixture of bioclastic and volcaniclastic sandy turbidites.
Hemipelagic sediments with one tephra layer of medium sand in size. All sediments are highly deformed.

Graphic log - Average grain size matrix sediment

Hole 340-U1395A-13H Section 4, Top of Section: 103.9 CSF-A (m)

Deformed sediment

Highly deformed hemipelagic sediments from 60 - 150 cm

Dominantly muddy to silty but with some beds or patches of dark sandy material

Light grey sediments with few green zones

Hemipelagic deposit
Grey colored totally deformed hemipelagic sediments (slump deposits?).
Highly deformed muddy hemipelagic sediment with light grey to greyish pink color. There are many patches of various shapes and colors especially lower part of this section. Deformation might be due to slumping.
Hemipelagic sediments, heavily disturbed in upper part of section.

Deformed hemipelagic sediments

Mixed sediments of different color

End of deformed sediment
Heavily disturbed hemipelagic sediments.
Deformed hemipelagic sediments with a brown colored volcaniclastic mud layer in the upper part of this section.
Hemipelagic sediments, sometimes heavily distorted and slightly bioturbated.

Deformed hemipelagic sediments
some of pumice clasts of the lower turbidite are incorporated
zone of different color imbricated

zone of more sandy sediment
Part of pumiceous, volcaniclastic turbidite sequence; 4 cm size pumice.

<table>
<thead>
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<th>Depth (CSF-A) (m)</th>
<th>Grain size</th>
<th>Graphic log - Average grain size</th>
<th>Matrix alteration intensity</th>
<th>GRA bulk density (g/cm³)</th>
<th>Magnetic susceptibility (SI)</th>
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</table>

Sandy grey, mixed hemipelagic sediments, and with the finer part of the turbidite.

Volcaniclastic turbidite

Abundant pumice clasts at the base of the section (components of the matrix: crystals, lava flow carbonate, no pumice observed.)
Mixed volcanioclastic/carbonate turbidite with rounded pumice clasts.
Middle part of a volcaniclastic turbidite with pumice clasts. Normal grading from the bottom of the section to the top. Pumice clasts (up to 1.5 cm size), feldspar, and amphibole grains are present.
Volcaniclastic turbidite normally graded from coarse sand to medium sand in size, with angular pumice clasts of up to 1 cm.

Abundant pumice clasts from stem at the base to 3.4 mm at the top.
Pumice clasts from core catcher with spare matrix in between.
Thick volcanlastic turbidite with pumice-rich matrix and clasts.

mud clasts (~7cm) included in the turbidite

volcanlastic turbidite normally grained from very coarse sand to medium sand.

few pumice clasts at the base.
Pumiceous massive unit; pumice clasts (up to 2 cm) and amphibole are present.

Light grey volcaniclastic turbidite, normally graded (like whole core) with coarse-grained sand matrix and abundant pumice clasts ~2.5 cm.

Large clasts are concentrated in the central part of the section.
Coarse grained volcanioclastic turbidite, probably lower portion of the pumiceous volcanioclastic turbidite sequence.
Lowermost part of pumiceous volcaniclastic turbidite.
Highly disturbed (by coring) hemipelagic sediment with a single large (40 mm) andesite lava clast.
Hemipelagic fines.

- Mixed biogenic volaniclastic silt - perhaps a turbidite?
- Compacted hemipelagic sediment
- Grey silt to light grey silt
- Few patches of dark sand
Laminated hemipelagic sediments intercalated with compacted purplish grey clay bearing on bioturbation. A minor fault is present at 108 cm.
Sequence of slightly to moderately lithified calcareous sands with a thin ash-rich layer.
Laminated, bioturbated, hemipelagic sediments.
Grey, laminated, bioturbated, hemipelagic sediments.
Severely disturbed (by drilling) sample of pumice-rich volcaniclastic turbidite.

Hole 340-U1395A-19X Section CC, Top of Section: 145.1 CSF-A (m)
Heavily disturbed pieces of volcaniclastic sand with pumice and bioturbated hemipelagic sediments.

Graphic log -
Average grain size
matrix sediment

Clast type %
- Pebbles or coarser
- Granules
- Very coarse sand
- Coarse sand
- Medium sand
- Fine medium sand
- Fine sand
- Very fine sand
- Silt-fine sand
- Fine mud

MIN lith
MAJ lith

Magnetic susceptibility (SI)
GRA bulk density (g/cm³)
Matrix alteration intensity

Core length (cm)
Depth CSF-A (m)
Drilling disturbance
Core image
Graphic lithology

154.70
154.75
154.80
154.85
154.90
155.00
155.05
155.10
Moderately lithified hemipelagic sediment with strong bioturbation, including patches of medium sand in burrows. Top 10 cm severely damaged by drilling.
Hemipelagic sediment with turbidites.
Early Pleistocene

- Magnetic susceptibility (SI)
- GRA bulk density (g/cm³)
- Matrix alteration intensity
- Matrix sorting
  - Very coarse sand
  - Coarse sand
  - Medium sand
  - Fine medium sand
  - Fine sand
  - Fine mud
  - Silt-fine mud
  - Very fine mud

Lithology:
- Core image
- Drilling disturbance
- Depth CSF-A (m)
- Core length (cm)

Hemipelagic fines with turbidite.

Hole 340-U1395A-22X Section 1, Top of Section: 168.9 CSF-A (m)

Graphic lithology

Graphic log - Average grain size matrix sediment

Clast type %

Pebbles or coarser

Granules

Very coarse sand

Coarse sand

Medium sand

Fine medium sand

Fine sand

Fine mud

Silt-fine mud

Very fine mud
Hemipelagic sediment and turbidite.

Light gray to brown hemipelagic sediment muddy to silty

Abundant burrows highly indurated

Fine dark volcanic sand, bedded

(see stephanie)
This section contains three turbidites having normal grading at 62-66, 123-130, and 143-151 cm intervals. The upper parts of turbidites are commonly bioturbated and the boundaries with the upper hemipelagic sediment are often diffuse.
Beded hemipelagic sediment.
Upper 100 cm is strongly bioturbated (with burrowing rich) carbonate sand-ooze, which makes consolidated-unconsolidated alternations. Lowermost part is made of slightly bioturbated pure lime mud.

Hole 340-U1395A-25X Section 1, Top of Section: 193.0 CSF-A (m)
Discontinuous clasts of fine grained carbonate. One large carbonate clast is present in the upper layer. Bioturbation is common throughout. Color differences are likely due to introduction of material by bioturbation. Bottom layer has thick beds of grey to white carbonate. Color differences due to microscopic clast differences.

<table>
<thead>
<tr>
<th>Depth (CSF-A) (m)</th>
<th>Core image</th>
<th>Graphic litho-</th>
<th>Graphic log - Average grain size matrix sediment</th>
<th>MAJ lith grain size</th>
<th>MIN lith grain size</th>
<th>Matrix alteration intensity</th>
<th>GRA bulk density (g/cm³)</th>
<th>Magnetic susceptibility (SI)</th>
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</table>
Consolidated hemipelagic sediment interlayered with two turbidites. Heavily bioturbated, and boundaries of layers are unclear.
This section is commonly bioturbated. There are three volcaniclastic mud layers (which may be ash layers) at 26-28, 28-31 and 105-111 cm. Most other parts are hemipelagic calcareous ooze.
Hemipelagic clay interlayered with normally graded volcaniclastic unit, from fine sand to fine mud.
Consolidated, hemipelagic fine sediments.
Calcilusous mudstone pebbles. PAL sample from base.
Early Pleistocene

Shipboard samples

Magnetic susceptibility (SI)

GRA bulk density (g/cm³)

Matrix alteration intensity

Matrix sorting

MIN lith grain size

MAJ lith grain size

Clast type %

Mixed coarsening

Early Pleistocene

Mix of calcareous mudstone and pumice pebbles.

Hole 340-U1395A-28X Section 1, Top of Section: 221.7 CSF-A (m)
Calcarenite sandstone cobbles. PAL sample from base.
<table>
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<tr>
<th>Sample</th>
<th>Top (cm)</th>
<th>Bottom (cm)</th>
<th>Groundmass percentage [%]</th>
<th>Groundmass modal grain size [mm]</th>
<th>Groundmass comments</th>
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**Volcanic grain [%]**

- **Volcanic grain modal size [mm]**
- **Volcanic grain comments**

**Biogenic grain [%]**

**Mineral grain [%]**

- **Mineral grain modal size [mm]**
- **Mineral grain comments**

**Lithic grain [%]**

- **Lithic grain modal size [mm]**
- **Lithic grain comments**

**Olivine present [%]**

- **Olivine size MIN [mm]**
- **Olivine shape**
- **Olivine comment**

**Plagioclase present [%]**

- **Plagioclase size MAX [mm]**
- **Plagioclase shape**
- **Plagioclase habit**
- **Plagioclase comment**

**Clinopyroxene present [%]**

- **Clinopyroxene size MAX [mm]**
- **Clinopyroxene shape**
- **Clinopyroxene habit**
- **Clinopyroxene special features**

**Orthopyroxene present [%]**

- **Orthopyroxene size MAX [mm]**
- **Orthopyroxene shape**
- **Orthopyroxene habit**
- **Orthopyroxene comments**

**Amphibolite present [%]**

- **Amphibolite size MAX [mm]**
- **Amphibolite shape**
- **Amphibolite habit**
- **Amphibolite comments**

**Oxides present [%]**

- **Oxides size MAX [mm]**
- **Oxides shape**
- **Oxides habit**
- **Oxides comments**

**Quartz present [%]**

- **Quartz size MAX [mm]**
- **Quartz shape**
- **Quartz habit**

**Comment**

- **Grain mount**
- **volcaniclastic sand; potentially some carbonate mixed in.**
- **Pumice clast - too thin to properly log.**

- **Analyses done by Scott W. Moore at MCAE**
- **Final report in progress**

- **Note: Data collected on a single slide, potentially over a horizontal interval.**

- **Figure 1 (A):** (description of the figure)