SITE 915 HOLE A CORE 1R  
CORED 0.0 - 4.3 mbsf

<table>
<thead>
<tr>
<th>Meter</th>
<th>Graphic Lith.</th>
<th>Section</th>
<th>Age</th>
<th>Structure</th>
<th>Disturb</th>
<th>Sample</th>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>1</td>
<td>Pleistocene-Holocene</td>
<td></td>
<td></td>
<td></td>
<td>5Y 3/2</td>
<td>SILTY SAND and CLAY WITH SILT SAND AND DROPSTONES</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>2</td>
<td>Pleistocene-Holocene</td>
<td></td>
<td></td>
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<td>5Y 3/1</td>
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</tr>
</tbody>
</table>

Major Lithologies:
- SILTY SAND (Section 1, 0 to 125 cm) without visible sedimentary structures. The sediment contains many small rock fragments (up to 1 cm) and a few small shell fragments. CLAY WITH SILT, SAND AND DROPSTONES (Section 2, 0 to 77 cm and CC, 0 to 4 cm) occurs as massive, stiff bed. The sediment contains some small (1- to 2- cm) subangular, and one large (5 x 3 cm) subangular, fine-grained basaltic fragments (i.e., dropstones). Small rock fragments (<1 cm) are scattered throughout.

Minor Lithology:
- CLAYEY SILT (Section 1, 125 to 146 cm) occurs as a massive, compacted bed. The sediment contains many small (up to 1 cm), and two larger rock fragments, as well as a few small shell fragments. The larger rock fragments are: 1) an angular chert clast, 2 cm across, 2) an angular, black-greenish metagabbro, 3 cm across.
General Description:
This core consists of five rocks. From top (Piece 1) to bottom (Piece 5) the rock types and their maximum length are the following:

Piece 1: diorite, 6.5 cm;
COLOR: Dark gray (2.5Y 4/0).
LAYERING: None.
DEFORMATION: None.
PRIMARY MINERALOGY:
Plagioclase - Mode: 60%
Crystal size: 2 mm.
Crystal shape: Anhedral.
Clinopyroxene - Mode: 30%
Crystal size: 1 mm.
Crystal shape: Anhedral.
SECONDARY MINERALOGY: Chlorite replacing mafic minerals.
Total percent: 10%
Vein material: 3-mm-wide veins filled with chlorite.
ADDITIONAL COMMENTS: Clast in glacial sediments.

Piece 2: gneiss, 4 cm;
COLOR: Pink, white, and dark gray.
LAYERING: Banding and lineation defined by biotite.
PRIMARY MINERALOGY:
K-feldspar - Mode: 50%
Crystal size: 1-5 mm.
Crystal shape: Anhedral.
Quartz - Mode: 40%
Crystal size: 1-2 mm.
Crystal shape: Anhedral.
Biotite - Mode: 10%
Crystal size: 1-2 mm.
Crystal shape: Flakes.
ADDITIONAL COMMENTS: Clast in glacial sediment.

Pieces 2–5 of gneiss are probably from one large boulder. Gneiss clasts are slightly to moderately foliated and granitic (quartz, feldspar, and biotite) in composition.

Age: Quaternary.
SITE 915 HOLE A CORE 3R

<table>
<thead>
<tr>
<th>Meter</th>
<th>Graphic</th>
<th>Lith.</th>
<th>Section</th>
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<th>Structure</th>
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<th>Sample</th>
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</tbody>
</table>

**Description**

**GRAVEL**

**General Description:** This core consists of eight rocks. From top (Piece 1) to bottom (Piece 8) the rock types are the following:

**Piece 1:** green, pink, and white gneiss, 6 cm long; COLOR: Green, pink, and white.
- **LAYERING:** Banding defined by separation of light and dark minerals.
- **PRIMARY MINERALOGY:**
  - K-feldspar - Mode: 45%
  - Crystal size: 1-3 mm.
  - Crystal shape: Anhedral.
  - Quartz - Mode: 30%
  - Crystal size: 1 mm.
  - Crystal shape: Anhedral.
- **ADDITIONAL COMMENTS:** Clast in glacial sediment.

**Piece 2:** dark green metagabbro, 4 cm long; COLOR: Dark green and white.
- **LAYERING:** None.
- **PRIMARY MINERALOGY:**
  - Plagioclase - Mode: 60%
  - Crystal size: 0.5-1 mm.
  - Crystal shape: Anhedral.
  - Pyroxene - Mode: 30%
  - Crystal size: 0.5-1 mm.
  - Crystal shape: Anhedral.
- **SECONDARY MINERALOGY:** Pyrite; some alteration of pyroxene to epidote.
- **Total percent:** 1%
- **ADDITIONAL COMMENTS:** Clast in glacial sediment.

**Piece 3:** black, pink, and white gneiss, 5.5 cm long; COLOR: Gray, mottled.
- **LAYERING:** Faint layering, defined by biotite.
- **PRIMARY MINERALOGY:**
  - Quartz - Mode: 30%
  - Crystal size: 1-3 mm.
  - K-feldspar - Mode: 15%
  - Crystal size: 1-5 mm.
  - Plagioclase - Mode: 45%
  - Crystal size: 1-5 mm.
  - Biotite - Mode: 10%
  - Crystal size: 1-2 mm.
  - Crystal shape: Flakes.
- **SECONDARY MINERALOGY:** Epidote.
- **Total percent:** 5%
- **ADDITIONAL COMMENTS:** Clast in glacial sediment.

**Piece 4:** black, white, and greenish gneiss, 9.5 cm long; COLOR: Light gray, patchy.
- **LAYERING:** Faint.
- **PRIMARY MINERALOGY:**
  - Plagioclase - Mode: 60%
  - Crystal size: 0.5-1 mm.
  - Crystal shape: Anhedral.
  - Oxide minerals - Mode: 9%
  - Crystal size: <0.5 mm.
  - Crystal shape: Anhedral.
- **SECONDARY MINERALOGY:** Epidote.
- **Total percent:** 1%
- **Vein material:** 2-mm-wide epidote vein.
- **ADDITIONAL COMMENTS:** Clast in glacial sediment.

**Piece 5:** black, white, and greenish gneiss, 5.5 cm long; COLOR: Light gray, patchy.
- **LAYERING:** Faint.
- **PRIMARY MINERALOGY:**
  - Quartz - Mode: 50%
  - Crystal size: 1-3 mm.
  - Crystal shape: Anhedral.
  - Feldspar - Mode: 40%
  - Crystal size: 1-6 mm.
  - Crystal shape: Anhedral.
  - Biotite - Mode: 10%
  - Crystal size: 1 mm.
  - Crystal shape: Flakes.
- **SECONDARY MINERALOGY:** Epidote.
- **Total percent:** 5%
- **ADDITIONAL COMMENTS:** Clast in glacial sediment.

**Piece 6:** black, white, and greenish gneiss, 6 cm long; COLOR: Gray, mottled.
- **LAYERING:** Streaky, defined by biotite.
- **PRIMARY MINERALOGY:**
  - Biotite - Mode: 15%
  - Crystal size: 1-4 mm.
  - Quartz - Mode: 50%
  - Crystal size: 1-4 mm.
  - Crystal shape: Anhedral.
  - Plagioclase - Mode: 9%
  - Crystal size: 0.5-1 mm.
  - Crystal shape: Flakes.
- **SECONDARY MINERALOGY:** Flaky.
- **Total percent:** 25%
- **Crystal size:** 1-3 mm.

Age: Quaternary.
### SITE 915 HOLE A  CORE 4R
CORED 21.4 - 30.5 mbsf

<table>
<thead>
<tr>
<th>Meter</th>
<th>Graphic Lith.</th>
<th>Section</th>
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<th>Disturb</th>
<th>Sample</th>
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<th>Description</th>
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<tbody>
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<td></td>
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<td></td>
<td></td>
<td>GRAVEL</td>
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<td></td>
<td>Major Lithology: Core catcher contains one cobble, about 7 cm in length, of metabasalt.</td>
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<td></td>
<td>Piece 1: metabasalt.</td>
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<td>GROUNDMASS: Fine-grained.</td>
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<td></td>
<td>COLOR: Dark gray (5Y 4/1), green-gray.</td>
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<td></td>
<td></td>
<td></td>
<td>ALTERATION: Hydrothermal alteration to epidote, amphibole, and calcite at one end of specimen.</td>
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<td></td>
<td></td>
<td></td>
<td>Concentration of amphibole next to basalt.</td>
</tr>
<tr>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>VEINS/FRACTURES: Unknown; calcite vein forms one end of specimen.</td>
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<td>ADDITIONAL COMMENTS: Clast in glacial sediment.</td>
</tr>
</tbody>
</table>

### 915A 5R THROUGH 915A 10R NO RECOVERY

<table>
<thead>
<tr>
<th>Meter</th>
<th>Graphic Lith.</th>
<th>Section</th>
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<th>Disturb</th>
<th>Sample</th>
<th>Color</th>
<th>Description</th>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NO RECOVERY</td>
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<td></td>
<td>General Description: No recovery, but small amount of pebble-size gravel was taken from core catcher. The gravel consists of a wide assortment of rocks including one small sandy mud sample. Nannofossils in the mud are latest Eocene age.</td>
</tr>
</tbody>
</table>

### 915A 12R NO RECOVERY

### 915A 13R NO RECOVERY
### SITE 915 HOLE A CORE 14R

<table>
<thead>
<tr>
<th>Meter</th>
<th>Graphic Lith.</th>
<th>Section</th>
<th>Age</th>
<th>Structure</th>
<th>Disturb</th>
<th>Sample</th>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>121.2</td>
<td>SILT WITH SAND AND CLAY</td>
<td>1</td>
<td>latest Eocene</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Major Lithology: SILT WITH SAND AND CLAY, coarse-grained, poorly bedded, poorly sorted, very dark gray (5Y 3/1) beds with burrows filled by finer grained sand (olive gray, 5Y 4/2). Some parts are gradational in color. This siltstone contains granules and pebbles up to 3 mm in diameter. Larger grains are rounded to subangular. This core is slightly bioturbated throughout. A large wood fragment 1.5 cm across occurs at Section 1, 6 cm.</td>
</tr>
<tr>
<td>121.2</td>
<td>CALCEOUS MUDSTONE</td>
<td>1</td>
<td>latest Eocene</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Minor Lithology: CALCEOUS MUDSTONE, dark gray (5Y 4/1) fills a burrow at Section 1, 26 to 28 cm.</td>
</tr>
</tbody>
</table>

### SITE 915 HOLE A CORE 15R

<table>
<thead>
<tr>
<th>Meter</th>
<th>Graphic Lith.</th>
<th>Section</th>
<th>Age</th>
<th>Structure</th>
<th>Disturb</th>
<th>Sample</th>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>130.3</td>
<td>SILTY SAND WITH CLAY</td>
<td>1</td>
<td>latest Eocene</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>General Description: SILTY SAND WITH CLAY, coarse to medium grained, rounded through subangular grains, massive, poorly sorted, very dark gray (5Y 3/1) bed. A few grains are granule size. Small burrows are filled with finer grained sediments.</td>
</tr>
<tr>
<td>130.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Smear slide: 7 to 8 cm. Interstitial water sample: 11 to 15 cm. Paleontology sample: 9 to 11 cm.</td>
</tr>
<tr>
<td>130.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Age: latest Eocene.</td>
</tr>
</tbody>
</table>

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**Interpretation:**

- **SILT WITH SAND AND CLAY:**
  - Coarse-grained, poorly bedded, poorly sorted, very dark gray (5Y 3/1) beds with burrows filled by finer grained sand (olive gray, 5Y 4/2). Contains granules and pebbles up to 3 mm in diameter. Some parts are gradational in color. Bioturbated throughout with a large wood fragment 1.5 cm across at Section 1, 6 cm.
  - **Age:** Latest Eocene.

- **CALCEOUS MUDSTONE:**
  - Dark gray (5Y 4/1) fill a burrow at Section 1, 26 to 28 cm.
  - **Age:** Latest Eocene.

- **SILTY SAND WITH CLAY:**
  - Coarse to medium grained, rounded through subangular grains. Massive, poorly sorted, very dark gray (5Y 3/1) bed. Contains granules and fine-grained sediments. Smear slide: 7 to 8 cm. Interstitial water sample: 11 to 15 cm. Paleontology sample: 9 to 11 cm.
  - **Age:** Latest Eocene.
### Site 915 Hole A Core 16R

**Cored**: 130.3 - 139.5 mbsf

<table>
<thead>
<tr>
<th>Meter</th>
<th>Graphic Lith.</th>
<th>Section</th>
<th>Age</th>
<th>Structure</th>
<th>Disturb</th>
<th>Sample</th>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Eocene</td>
<td></td>
<td>SS</td>
<td>S</td>
<td>S</td>
<td>CLAYEY NANNOFOSSIL SILT WITH ZEOLITES, SANDY SILT WITH CLAY and NANNOFOSSIL CLAY MIXED SEDIMENT WITH SAND</td>
</tr>
</tbody>
</table>

**Major Lithologies:**
- CLAYEY NANNOFOSSIL SILT WITH ZEOLITES, SANDY SILT WITH CLAY and NANNOFOSSIL CLAY MIXED SEDIMENT WITH SAND, with slight to heavy burrowing throughout the core.
- Numerous coarse yellow (coated?) quartz grains (1 mm in size) in the very disturbed soft sediment at 36–44 cm.
- Pyrite grains dispersed throughout.
- At 112–119 cm trace fossils observed include *Ophiomorpha*, *Planolites*, and *Chondrites*, possibly *Thalassinoides*.

**Minor Lithologies:**
- CALCAREOUS MUDSTONE and CALCAREOUS SANDY SILTSTONE.

### Site 915 Hole A Core 17R

**Cored**: 139.5 - 148.6 mbsf

<table>
<thead>
<tr>
<th>Meter</th>
<th>Graphic Lith.</th>
<th>Section</th>
<th>Age</th>
<th>Structure</th>
<th>Disturb</th>
<th>Sample</th>
<th>Color</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Eocene</td>
<td></td>
<td>S S M</td>
<td>S</td>
<td>S</td>
<td>ZEOLITES and SILT WITH SAND, CLAY AND ZEOLITES</td>
</tr>
</tbody>
</table>

**Major Lithologies:**
- At 0–6 cm, SILTY SAND WITH CLAY AND ZEOLITES, mottled due to strong bioturbation. Color is very dark gray (5Y 3/1). Burrow infilled with SILT WITH SAND, CLAY AND ZEOLITES.

**Minor Lithologies:**
- SANDY NANNOFOSSIL MIXED SEDIMENT WITH CLAY, SILT AND GLASS.
- Paleo sample at 6–8 cm.
- Two smear slides at 1 and 3 cm.
- Age: late Eocene.
**SITE 915 HOLE A CORE 18R**

<table>
<thead>
<tr>
<th>Core</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORED 148.6 - 158.1 mbsf</td>
<td><strong>CALCAREOUS MUDSTONE, CLAYEY SILT and CLAYEY SILT WITH SAND</strong></td>
</tr>
</tbody>
</table>

**Major Lithologies:**
- CALCAREOUS MUDSTONE, dark greenish brown (5GY 4/1) forms a strongly bioturbated, otherwise structureless, dark greenish gray bed from 0-21 cm. Dusky red (10R 3/2) CLAYEY SILT and CLAYEY SILT WITH SAND dominate the remainder of the core. Generally massive, with rare slight burrowing. Contains plant fragments, basaltic rock fragments, and bright red ferruginous particles.

**Minor Lithologies:**
- At 0-21 cm in Section 1, CLAYEY CALCAREOUS MUDSTONE with less than 1% wood fragments, less than 1% glauconitized burrows. 70% quartz grains (<1 mm across), angular, clear, subrounded, yellow, together with abundant glassy black fragments, possibly basaltic.
- At 21-27 cm in Section 1, transition from sand above to mud below: sand burrowed down into mud, partly homogenized by bioturbation. Burrows concentrate sand. Common mm-sized ovoid fecal pellets present.
- At 25-34 cm in Section 3, CALCITE-CEMENTED SILTSTONE with highly bioturbated intervals: Chondrites, Planolites, Ophiomorpha (lined burrow), possible Zoophycos.
- Ovoid pyritized burrows at 127 cm in Section 1, 37 cm (5 mm across) and 101 cm in Section 2, 46 cm (4 mm across) in Section 3, elongated pyritized burrow (7 x 18 mm) at 119 cm in Section 3.

**Drilling disturbance:**
- Drilling biscuits with ground up sediment between them at 0-66 cm in Section 2, at 0-25 and 34–150 cm in Section 3.

**Age:** Presumed late Eocene.
SITE 915 HOLE A CORE 19R
CORED 158.1 - 162.9 mbsf

<table>
<thead>
<tr>
<th>Section</th>
<th>Structure</th>
<th>Sample</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>S</td>
<td></td>
<td></td>
<td>Silt with clay and sand and sandy silt</td>
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<tr>
<td>2</td>
<td>X</td>
<td>10R, 3/2</td>
<td>S</td>
<td>Silt with clay and sand</td>
</tr>
<tr>
<td>3</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>Sand with clay</td>
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<tr>
<td>4</td>
<td>S</td>
<td>S</td>
<td>M</td>
<td>Silt with sand</td>
</tr>
<tr>
<td>5</td>
<td>S</td>
<td>S</td>
<td>M</td>
<td>Silt with sand</td>
</tr>
</tbody>
</table>

Major Lithologies:
- Silt with clay and sand is the dominant lithology at the top of the core, passing gradually down into sandy silt towards the base. Color is dusky red with thin laminae of darker red. Parallel laminae, alternating sand and silt, due to grain-size variations are found throughout core, weakly defined, but increasing in frequency downcore. Some laminae show slight bedding dip (up to 10°). Small channel structures are seen in Sections 2 to 4.

Minor Lithologies:
- Minor amounts of silty clay occur in the darker colored laminae. A filled burrow in Section 3, 29-30 cm is calcareous mudstone with clay. Silt with sand occurs in minor quantities at Section 2, 114-115 cm. Pyrite-filled burrows occur in Section 1 at 3, 35, 36, 60, 117, and 138 cm and in Section 2 at 24, 84, and 111 cm.

Barren of fossils; age inferred from adjacent strata.
<table>
<thead>
<tr>
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<th>Sample</th>
<th>Color</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td></td>
<td>1</td>
<td>middle-late Eocene</td>
<td>S</td>
<td>S</td>
<td>M</td>
<td>10R 3/2</td>
<td>CLAYEY SILT WITH SAND</td>
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</tbody>
</table>

General Description: CLAYEY SILT WITH SAND is the dominant, dusky red lithology in a laminated section with minor amounts of reddish gray SANDY SILT forming the thinner laminae. Laminae are caused by changes in grain size, with the darker bands coarser grained than the dominant dusky red lithology. There is some flow-in of mud between drilling biscuits due to drilling disturbance.

Core catcher is barren of microfossils.
<table>
<thead>
<tr>
<th>Meter</th>
<th>Graphic Lith.</th>
<th>Section</th>
<th>Age</th>
<th>Structure</th>
<th>Desaturate</th>
<th>Color Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>S</td>
<td>S</td>
<td>5Y 3/1</td>
<td>Silty sand with clay and sandy silt with clay</td>
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<td>10YR 2/1</td>
<td>Major lithologies: Silty sand with clay is the dominant lithology through most of the core. Its color is dark green to black, with small burrows in locally bioturbated zones appearing tan, black, or golden, due to pyrite in the burrow filling. Heavily bioturbated zones are calcite-cemented, and appear white or speckled. Sandy silt with clay closely resembles silt beds, but is slightly finer.</td>
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<td>2</td>
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<td>S</td>
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<td>5Y 2.5/1</td>
<td>Minor lithology: A thin section of dusky red silt clay with sand occurs in the top 7 cm of section 1, deposited on a sharp contact with the underlying sandy silt. It is thinly bedded, with dark layers 1-2 mm thick of slightly coarser material in a brown clay matrix. This sediment is the base of the overlying unit that occurs in core 20R.</td>
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<td>3</td>
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<td>S</td>
<td>S</td>
<td>5Y 3/1</td>
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<tr>
<td>Depth (mbsf)</td>
<td>Lithology</td>
<td>Description</td>
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</tr>
<tr>
<td>177.5-187.1</td>
<td>SILT WITH SAND AND CLAY</td>
<td>Major Lithologies: SILT WITH SAND AND CLAY occurs through most of the core, and is black to dark gray, homogeneous, with local mottling due to burrowing of Planolites, Chondrites and possibly Zoophycos. Pyrite crystals are found in burrows. Local zones of calcareous cement are white to &quot;salt and pepper.&quot;</td>
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<tr>
<td>177.5-187.1</td>
<td>CALCAREOUS MUDSTONE WITH SAND</td>
<td>CALCAREOUS MUDSTONE WITH SAND forms a massive light gray layer. It is strongly bioturbated.</td>
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<tr>
<td>177.5-187.1</td>
<td>Minor Lithologies:</td>
<td>Light gray CALCAREOUS SANDSTONE WITH GLAUCONITE is found at 6 to 8 cm in Section 1 and grades down into CALCAREOUS MUDSTONE WITH SAND at 8-9 cm, finally into black to very dark gray SANDY SILT. Lithologies are homogeneous and show significant amounts of burrowing, particularly in the more strongly cemented layers. A cobble of metabasalt occurs in the core catcher; probably downhole contamination.</td>
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</table>

**Piece 1: metabasalt.**

**CONTACTS:** None.

**PHENOGRYSTS:** None.

**VESICLES:** None.

**COLOR:** Light gray (5Y 6/1).

**ALTERATION:** Primary minerals are heavily altered to sericite, chlorite, and amphibole.

**ADDITIONAL COMMENTS:** Possible downhole contamination.
SITE 915 HO/LE A CORE 23R

Description
CALCAREOUS PEBBLE CONGLOMERATE, VOLCANIC CLAYEY SILT WITH SAND AND GRAVEL, and BASALT

Major Lithologies:
CALCAREOUS PEBBLE CONGLOMERATE (Section 1, 0 to 121 cm) occurs as a bed of well-rounded and subrounded to subangular rock fragments in a silty to sandy, calcite-cemented matrix. The color of the matrix ranges from white to yellowish brown. The rock fragments, up to 14 cm across, include basalt and dolerite (>80%), quartzite, reddish claystone, sandstone, and gabbro. VOLCANIC CLAYEY SILT WITH SAND AND GRAVEL (Section 2, 7 to 110 cm) consists of several highly weathered units, with interspersed basaltic rock fragments of different grain size (up to 6 cm) and degree of roundness (angular to well rounded) and alteration. The color ranges from very dusky red to dark reddish gray. Normal-graded bedding of the rock fragments occurs in one unit (Section 2, 48 to 70 cm). A possible second graded unit occurs between 42 and 48 cm (Section 2). Clasts are all angular and basaltic. Sorting is very poor. BASALT (Section 2, 70 to 110 cm), vesicular, increasingly scoriaceous towards the top. The basalt is completely altered to clay but its original structure is still apparent.

Minor Lithologies:
GRAVEL (Section 2, 0 to 5 cm) occurs as one altered dolerite fragment (5 cm). SILTY CLAY (Section 2, 5 to 7 cm) contains traces of angular quartz and feldspar and occurs as a nonfossiliferous yellowish brown (10YR 5/3) bed. Minor amounts of CLAYEY SILT WITH SAND and SILTY SAND are found in

<table>
<thead>
<tr>
<th>Meter</th>
<th>Graphic Lith.</th>
<th>Section</th>
<th>Age</th>
<th>Structure</th>
<th>Disturb</th>
<th>Sample</th>
<th>Color</th>
<th>Core.</th>
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<tr>
<td>0</td>
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<td>5R/3</td>
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UNIT 1: APHYRIC BASALT

Piece 1: altered dolerite
COLOR: Greenish gray.
LAYERING: None.
PHENOCRYSTS: None.
GROUNDMASS: Fine-grained.
VESICLES: None.
ALTERATION: Olivine altered to iddingsite.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.

Piece 2: aphyric basalt
COLOR: Dark olive green (10Y 4/2).
VEINS/FRACTURES: 3 mm wide; filled with quartz.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.

Piece 3: dolerite
GROUNDMASS: Ophitic texture, grain size up to 1 mm, contains Plagioclase and pyroxene.
VESICLES: None.
COLOR: Gray (5Y 5/1).
ALTERATION: Some alteration of mafic minerals to chlorite.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.

Piece 4: dolerite
GROUNDMASS: Ophitic texture, grain size up to 1 mm.
VESICLES: None.
COLOR: Gray (5Y 5/1).
ALTERATION: Olivine altered to iddingsite.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.

Piece 5: aphyric olivine basalt
PHENOCRYSTS: None.
GROUNDMASS: Fine-grained.
VESICLES: None.
COLOR: Greenish gray (5G 5/1).
ALTERATION: Olivine altered to iddingsite.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.

Piece 6: aphyric olivine basalt
PHENOCRYSTS: None.
GROUNDMASS: Fine-grained.
VESICLES: None.
COLOR: Dark gray (2.5 Y 4/0).
ALTERATION: Olivine altered to iddingsite.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.

Piece 7: aphyric olivine basalt
CONTACTS: Well-rounded contact to surrounding sediment. No contact alteration.
PHENOCRYSTS: None.
GROUNDMASS: Fine-grained.
VESICLES: None.
COLOR: Dark gray (2.5 Y 4/0).
ALTERATION: Olivine altered to iddingsite.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.

Piece 8: aphyric basalt
CONTACTS: Well-rounded contact to surrounding sediment.
PHENOCRYSTS: None.
GROUNDMASS: Fine-grained.
VESICLES: None.
COLOR: Dark olive gray (10YR 5/1).
ALTERATION: Some alteration of mafic minerals to chlorite.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.

Piece 9: aphyric basalt
CONTACTS: Well-rounded contact to surrounding sediment.
PHENOCRYSTS: None.
GROUNDMASS: Fine-grained.
VESICLES: None.
COLOR: Dark olive gray (10YR 5/1).
ALTERATION: Some alteration of mafic minerals to chlorite.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.

Piece 10: plagioclase-olivine basalt
PHENOCRYSTS: None.
GROUNDMASS: Aphanitic.
VESICLES: One 2-mm-filled vesicle in center of clast.
COLOR: Gray (5Y 5/1).
STRUCTURE: Onion-shell weathering: an outer 3-mm-thick layer is separated from the center by a thin zeolite-filled crack.
VEINS/FRACTURES: 1%; up to 1 mm; variable; a net of anastomosing tending to radial cracks filled with zeolite. More abundant in center of clast.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.

Piece 11: plagioclase-olivine basalt
CONTACTS: Well-rounded contact to surrounding sediment.
PHENOCRYSTS: None.
GROUNDMASS: Aphanitic.
VESICLES: None.
COLOR: Dark greenish gray (2.5 Y 4/0).
ALTERATION: Olivine altered to iddingsite.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.

Piece 12: plagioclase-olivine basalt
CONTACTS: Well-rounded contact to surrounding sediment.
PHENOCRYSTS: None.
GROUNDMASS: Aphanitic.
VESICLES: None.
COLOR: Greenish gray (5G 5/1).
ALTERATION: Olivine altered to iddingsite.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.

Piece 13: plagioclase-olivine basalt
CONTACTS: Well-rounded contact to surrounding sediment.
PHENOCRYSTS: None.
GROUNDMASS: Aphanitic.
VESICLES: None.
COLOR: Greenish gray (5G 5/1).
ALTERATION: Olivine altered to iddingsite.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.

Piece 11
COLOR: Mottled dark gray (5Y 4/1).
LAYERING: None.
DEFORMATION: None.
PRIMARY MINERALOGY:
Olivine - Mode: 10%
Crystal size: 2 mm.
Crystal shape: Subhedral.
Comments: Partly altered to iddingsite.
Pyroxene - Mode: 40%
Crystal size: 2 mm.
Crystal shape: Subhedral.
Plagioclase - Mode: 50%
Crystal size: 2 mm.
Crystal shape: Subhedral.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.

Piece 14: basalt
PHENOCRYSTS: Glomerophyric clusters of pyroxene and plagioclase.
Plagioclase - 3%; 1 mm.
Augite - 1%; 0.3 mm.
GROUNDMASS: Fine-grained.
VESICLES:
Miiaroles: Rare calcite-lined cavities up to 3-mm diameter.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.

Piece 15: dolerite
PHENOCRYSTS: None.
GROUNDMASS: Intergranular intergrowth of plagioclase, pyroxene, and olivine.
VESICLES: None.
ALTERATION: Olivine partially altered to iddingsite.
ADDITIONAL COMMENTS: Clast in volcanic conglomerate.
UNIT 1: THOROUGHLY OXIDIZED AND VESICULATED BASALT

CONTACTS: The topmost 2–3 cm have a fragmentary character with up to 4 mm fragments. This zone is overlain by a conglomeratic sediment with rounded volcanic clasts up to 3 cm, and volcanogenic matrix with almost the same color as the basalt. A 3 cm clast lies directly on the flow top.

PHENOCRYSTS: None.

GROUNDMASS: No primary minerals; all red clay.

VESICLES: 2%–5%; up to 3 mm; irregular shape; fairly even distribution; the vesicles are filled with zeolite and yellowish clay. At 80–82 cm is a zone with more frequent, up to 6 mm, large streaky irregular vesicles.

COLOR: Dusky red (5R 3/3).

STRUCTURE: Indistinct flow structure enhanced by thin streaks of yellowish clay.

ALTERATION: The rock is completely altered.

ADDITIONAL COMMENTS: Because of its friable nature, this core section was not labelled during curation.
UNIT 1: OXIDIZED AND VESICULATED BASALT

CONTACTS: Basal contact not preserved; see comments.
PHENOCRYSTs: None.
GROUNDMASS: Completely altered to red clay.
VESICLES: 15%; 0.5-4 mm; irregular shape; random distribution; larger vesicles (5%) are filled with white zeolites; smaller ones (10%) are filled with green and brown clay and many are incompletely filled.
COLOR: Dusky red (10R 3/3) at top and more brownish (10R 3/2) further down.
ALTERATION: The rock is completely altered.
VEINS/FRACTURES: Hair thin; random orientation; some fractures are filled with green-brown clay.
ADDITIONAL COMMENTS: The lowest 10 cm contain individual pieces: one is a 3.5-cm-long well-rounded dolerite clast, three resemble the 0-50 cm interval lithology, and one is a different vesicular basalt. A sedimentary unit not well preserved during drilling must be present between the base of Unit 1 (50 cm) and the top of Unit 3 (70 cm). Pieces not labelled.

UNIT 2: FINE-GRAINED LEUCOCRATIC ROCK

Piece 1

CONTACTS: None.
PHENOCRYSTs: None.
GROUNDMASS: Fine-grained.
VESICLES: None.
COLOR: Greenish gray (5Y 5/1).
STRUCTURE: Massive, homogeneous.
ADDITIONAL COMMENTS: This single piece is 6 x 6 cm large and could be a cobble in a poorly preserved sedimentary unit between Unit 1 (50 cm) and Unit 3 (70 cm).

UNIT 3: PLAGIOCLASE-OLIVINE-PYROXENE GLOMEROPORPHYRITIC BASALT

Pieces 2-5

CONTACTS: None. Flow top not present.
PHENOCRYSTs: The phenocrysts occur in 2-4 mm glomerocrysts of mainly plagioclase and a few olivines and pyroxenes. Most are unaltered.
Plagioclase - 3%; 0.25-0.5 mm.
Olivine - <1%; 0.25-0.5 mm.
Pyroxene - <1%; 0.25-0.5 mm.
GROUNDMASS: Fine-grained.
VESICLES: 15%; 0.5-4 mm; round to slightly flattened; disseminated; larger vesicles have a 0.5-mm-thick lining of grayish to blackish green clay and centers that are either empty or filled with light gray smectite clay. Small vesicles are filled with grayish green clay.
COLOR: Dark gray (5Y 3/1).
STRUCTURE: Flow banding defined by slight color variation in the groundmass on a 3 mm scale occurs in 78-87 cm interval.
VEINS/FRACTURES: <1%; <1 mm wide; steeply dipping veins are filled with dark green clay; horizontal, 1-5-cm-long veins are filled with white clay. Veins occur in the 84-121 cm interval.
UNIT 3: PLAGIOCLASE-PYROXENE-OLIVINE GLOMEROPORPHYRITIC BASALT

Pieces 1–3B

CONTACTS: None.

PHENOCRYSTS: The phenocrysts occur in 2–4 mm gномерocrysts of mainly plagioclase and a few olivines and pyroxenes. They are unaltered.

- Plagioclase - 6%; 0.25–0.5 mm.
- Olivine - <1%; 0.25–0.5 mm.
- Pyroxene - <1%; 0.25–0.5 mm.

GROUNDMASS: Fine-grained.

VESICLES: 10%; 0.5–4 mm; round to slightly flattened shape; larger vesicles have a 0.5-mm-wide lining of grayish green clay and centers that are empty or filled with light gray smectite clay. The large vesicles are confined to the intervals 0–8, 25–38, and 85–88 cm. In the 25–38 cm interval, vesicles are aligned in a train dipping 65 degrees. Smaller vesicles are filled with grayish green clay and are disseminated throughout the rock.

COLOR: Dark gray (SY 3/1).

STRUCTURE: Faint flow banding occurs in the 67–84 cm interval.
UNIT 3: PLAGIOCLASE-OLIVINE-PYROXENE-GLOMEROPORPHYRITIC BASALT

Pieces 1A–2

CONTACTS: None.

PHENOCRYSTS: The phenocrysts occur in 2–4 mm glomerocrysts of mainly plagioclase and a few olivines and pyroxenes.
- Plagioclase - 3%; 0.25–0.5 mm.
- Olivine - <1%; 0.25 mm.
- Pyroxene - <1%; 0.25 mm.

GROUNDMASS: Fine-grained.

VESICLES: 10%; 0.5–6 mm; round to slightly flattened shape; uneven distribution; larger vesicles have a 0.5-mm-thick lining of gray-green to black-green clay and may be empty or filled with brownish-gray smectite in the center. Smaller vesicles are filled with gray-green clay.

COLOR: Dark gray (5Y 3/1).

STRUCTURE: At 0–24 cm is a large vertical pipe structure. It has a 1–2-cm-wide incomplete central zone rich in 3–6-mm-large vesicles and a 1.5–2-cm-wide marginal zone with only few and small (<1 mm) vesicles. At 36–42 cm horizontal flow banding is seen.

VEINS/FRACTURES: <1%; <1 mm fractures; horizontal; occur in the flow-banded zone at 36–42 cm.
UNIT 3: PLAGIOCLASE-OLIVINE-PYROXENE GLOMEROPORPHYRITIC BASALT

Pieces 1–26

CONTACTS: None.

PHENOCRYSTS: The phenocrysts are lumped together in glomerocrysts.
- Plagioclase - 3%; 0.25–1 mm.
- Olivine - <1%; <0.5 mm.
- Augite - <1%; <0.5 mm.

GROUNDMASS: Fine-grained.

VESICLES: 5%–10%; 0.5–10 mm; spherical to irregular shape; random distribution; most have a lining, up to 0.5 mm thick, of green clay, usually smooth on inner surface but may be botryoidal or dendritic.

COLOR: Dark gray (5Y 3/1).

VEINS/FRACTURES: <1%; up to 1 mm; random orientation; lined with green clay similar to vesicle linings.

ADDITIONAL COMMENTS: Petrographically similar to continuous core of Unit 3 in Core 152-915A-24R-1 to -3.
UNIT 3: PLAGIOCLASE-OLIVINE-PYROXENE GLOMEROPORPHYRITIC BASALT

Piece 1

CONTACTS: None.

PHENOCHRYSTS: The phenocrysts are lumped together in glomerocrysts.
- Plagioclase - <1%; <1 mm.
- Olivine - <1%; <0.5 mm.
- Augite - <1%; <0.5 mm.

GROUNDMASS: Fine-grained.

VESICLES: 2%; 1-5 mm; spherical shape; random distribution; lined with a 0.2 mm layer of green clay.

COLOR: Dark gray (5Y 3/1).

ADDITIONAL COMMENTS: Single piece of basalt similar to Unit 3 in Cores 152-915A-24R and -25R.