

### 1. Drilling

Picture not to scale

200m core

Seafloor

Advanced Piston Core (APC):  
9.5m segments

Haf Adv. Piston Core (HAPC):  
4.7m segments

**Time: Depends on water depth**

### 2. Catwalk

Split into 1.5m segments

Infra-red Camera

Gas Hydrate shows up as a cold spot

Chemistry

Interstitial Water, Headspace, Void Space Gas

**Time: 10-30 min**

### 3. Thermal Equilibration

Wait until temperature of the core is the same as the temperature of the core lab.

**Time: ~4 hours**



### 10. Description

Color

Grain Size

Texture

Grain size gradients and other textural changes give hints about the sediment origin and deposition

Constituents

Which fossils are present?

**Time: 5-15 min**

### 4. Whole Round Multi Sensor Logger

Bulk Density

Sediment stiffness

Magnetic Susceptibility

Ease with which the sediment can be magnetised

Sonic Wave Speed

P-wave speed through sediment

**Time: 20 min**

### 5. Natural Gamma Ray Logger

Natural Gamma Radiation

Uranium, Thorium, Potassium

$^{238}\text{U}$   $^{232}\text{Th}$   $^{40}\text{K}$

**Time: 20 min**

### 6. Thermal Conductivity

Measure how temp. changes over time

Thermal Conductivity

How heat is transferred through the sediment

**Time: 20 min**

### 7. Split That Core!

Core Splitting

Cut the core in half and archive one half in the core repository

Sample and measure the other half of the core

**Time: 5-10 mins**

### 8. Images

Section Half Image Logger

Section Half Multi Sensor Logger

### 9. Gantry

P-wave speed

Measure P-wave (sonic) speed through sediment in three directions

Shear Strength

How much torque is required to deform the sediment?

**Time: 5-10 min**

High-Resolution Core Images

Red/Green/Blue breakdown

Point Magnetic Susceptibility

Color Reflectance

High Resolution images of the core, point magnetic susceptibility and color details help to identify individual sediment layers

**Time: 40 min**

### 12. Moisture and Density

Mass and Volume of Samples

Measure wet mass, place sample in oven for 24 hours, cool to room temperature, measure dry mass, finally measure dry volume

Density and Porosity

**Time: 5-10 min (+24h)**

### 11. Sampling

Samples of the cores are taken to perform different ship-based or shore-based experiments

**Time: ~30 min**

Storage Months

Shipping Weeks

Archival Permanent