HAWAI'I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT
DIVE: P5 - 600

MISSION STATUS

Location: Loihi Seamount

Latitude: 18°54.45 **Longitude:** 155°15.75

Mission Date: 10/25/04 **Duration:** 8 hours 2 mins

Maximum Depth: 1326 m

Project Title: Temporal Evolution of Loihi Seamount Geochemistry Across a Major Tectonic-Volcanic Event

Principal Investigator: Frank Sansone

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Observer 1: Jennifer J. Hughes **Observer 2:**
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Pilot 1: Terry Kerby **Pilot 2:** Max Cremer

Scientific Data Acquired: Prepare an abstract outlining your objectives, techniques, findings, etc.

Objectives: The primary objective of this study is to document the recovery of the Loihi hydrothermal system and its associated biological communities and chemical properties after the major volcanic-tectonic event of 1996, and to determine the temporal and spatial scales over which these changes occur. The continuation of this research as the seamount cools from the 1996 tectonic-volcanic event will provide insights to processes and fluxes that may have been previously unknown or theorized. In addition, the importance of our study is amplified by the increasing awareness that submarine volcanoes are important to global biogeochemical fluxes. Finally, the resulting greater understanding of the temporal variability of CO_2 release by Loihi hydrothermal vents will be valuable for predicting the role of hotspot volcanism on global CO_2 cycling; this is particularly important in light of the very high levels of CO_2 found in Loihi vent fluids.

Observations, findings, etc:
Landslides have significantly altered the seafloor at several locations within Pele's Pit.

Some rosette samples were taken at Lohiau vent site. A couple of water chemistry samples were taken at marker 5, in addition to more rosette samples for microbial analysis. Rigorous venting is occurring at a spot in between markers 39 and 36, which is now known as the "Midfield Vents". Relatively high temperatures were recorded at this site.

At marker 39 a water sampler was deployed.

At marker 30 various scientific deployments were retrieved, all for microbial analyses. At the Jet Vents Site more microbial experiments were retrieved.

Species list:

Chimera
Eel
Rattail fish
Synaphobranchidae

MISSION EVALUATION:

Limitations, failures, or operational problems noted: One of the titanium "Major" samplers failed to actuate when deployed.

Recommendations for corrective action or improvement: The hydraulic ram on the Pisces V HYCO manipulator has been tightened and slightly adjusted to accommodate the actuator on the titanium samplers.

In your opinion, did the mission essentially achieve its purpose? Compare actual work accomplished with the work that was expected to be accomplished.

All dive objectives were met.

List specimens or samples collected on the mission.

Samples collected: 3 titanium "majors" samples, 1 titanium gas-tight "Lupton" samples, 2 Niskin samples, 8 suction "rosette" samples

DATA RELEASE

Data may be retained by the project leader for up to 2 years after the mission date with the following exception. NOAA may request to use photos for publication or publicity purposes at any time.

Fill in the appropriate statement below and sign this form.

I hereby release the data archived by HURL for public consumption following mission (project title)

held on October 25, 2006 (date) in the following way:

a. CTD data by October 25, 2006 (date)

b. video and images by October 25, 2006 (date)

c. other October 25, 2006 (date)

d. I will give my written consent to individuals wishing to use these data prior to the above dates depending on the nature of the request(s).

_____ Principal Investigator