HAWAI'I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT
DIVE: P5-601

MISSION STATUS

Location: Loihi Seamount

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

Mission Date: 10/26/04 **Duration:** 8 hours 38 mins

Maximum Depth: 1325 m

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

Principal Investigator: Frank Sansone

Address: Oceanography Dept., Univ. of Hawaii, 1000 Pope Rd, Honolulu, HI 96822

Phone: 808-956-8370

Observer 1: Richard Davis
Address: Biology Dept.
Western Washington University
Bellingham, WA 98225

Observer 2:

Address:

Pilot 1: Terry Kerby

Pilot 2: Steve Price

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 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:
Returned to marker 22 site for the first time since 2001 and found no visible venting of water, however sediments were 32.5º C and thick microbial mats were observed. A new venting site was discovered below marker 39 and water samples were collected. Deployed new marker 31 at the Boiling Pot site and collected sediment samples. Collected microbial mat samples from a vent site below marker 39. Retrieved microbial samplers from marker 39 and marker 38 and collected water samples from marker 39. We also discovered water venting at 63.1° C from the spillway vent above marker 38.

Species list:
None

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

None

Recommendations for corrective action or improvement:

None

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 Niskin sample, 8 suction “rosette” samples, 3 bacteria traps, 1 slide trap, 2 miniature temperature recorders, 1 SIO charge

Samplers deployed: 2 SIO charges

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)

"Temporal Evolution of Loihi Seamount Geochemistry Across a Major Tectonic-Volcanic Event"

held on October 26, 2006 (date) in the following way:

a. CTD data by October 26, 2006 (date)

b. video and images by October 26, 2006 (date)

c. other October 26, 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