HAWAII UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT MISSION NO.P5-138

MISSION STATUS

Location: Loihi submarine Volcano (Pele's vents), off the Big Island of Hawaii

Mission Date: February 19, 1990

Maximum Depth: 1085 m.

Project Title: Hydrothermal and neovolcanic studies of Loihi submarine Volcano

Project Leader: Alexander Malahoff

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Observers: John Smith, Max Cremer

Address: Both at: University of Hawaii
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Scientific Data Acquired : Prepare an abstract outlining your objectives, techniques, findings, etc.

Our objectives were to map Pele's vents in detail for the M.S. thesis of Max Cremer. We wanted to find the extent, boundaries, and small-scale varies in geology using still and video photography, observers' observations, and rock samples. Our initial ideas had to be modified as usual due to time limitations, sub maneuverability, and currents, or the lack thereof to blow away the sediment clouds we stirred up. We also used D. Karl's 3 butterfly samplers (samples in 2) and deployed McMurtry's gas samplers. 178 photos were taken and almost 6 hrs. of video. We got a better idea of extent and boundaries of the field, number of vents per unit area, flow rate of warm water, and microtopography and its effect on number, type, size and location of vents.

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

Could not find Pele's vents for almost 2 hours. Pinger did not work when deployed. 1 butterfly sampler did not work properly (design problem). 2 GAWS samples secured together rather than individually. Pump on CTD did not work. Small sample basket. Static on panasonic video when motors operating. Intermittant camera faults on osprey camera. Long recycle time for port camera strobe.

Recommendations for corrective action or improvement:

It seems most of the problems were "small" electronic malfunctions on ancillary devices. The vital systems of the submersible itself worked OK. Perhaps more field testing and bench testing of devices before actual use would be good. Gradual improvements are probably required, as it seems one system always affects another!

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

Almost. We did as much sampling as we wanted to, but because this took time, along with driving around in circles to start with, we did not do as much mapping as is required to fully characterize Pele's vents to the detail we wished. We also did not get a detailed extent and boundaries of the vent field.

List specimens or samples collected on the mission.

5 rocks with nontronite-like coating
2 butterfly baggie samples with some sludge
Deployed 3 GAWS samplers in vent holes (bacterial mats?) to be recovered on next dive.

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 P5-138
(project title) held on February 19, 1990 (date) in the following way:

a. CTD data by _____(date)

b. voice transcripts, video, and still camera film by _____(date)

c. other _____(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).

_____
Project Leader