PISCES V DIVE REPORT

Pilot: Terry Kerby Dive #: PV-630 Date: May 13, 2005

Observer 1: Colin Wollerman

Affiliation: HURL Sub ops. PIT Dive Location: Brothers Volcano

Observer 2: Deb Gotchfeld Latitude: 34°52.653'S

Affiliation: University of Mississippi Longitude: 179°04.201'E

Purpose: (Research) Training Test Time of Dive: 0808

Other: Time of Surface: 1640

Special Equipment: Time Submerged: 8:32

Cameras: Sony - ROS - Data Cam Time Thru Last Dive: 4184:32

Manipulators: Titan - Hyco Total Time to Dive: 4193:04

Samplers/Sensors: Bio Box, Rock box, Niskin bottle, Sediment Scoops, Majors, Gas tights, CTD, Temp Probe Dive Depth: 1379m

Water Depth: 1379m

Support Vessel: R/V Kaimikai-o-Kanaloa Water Temperature: 3.5°c @ 1379m

Captain: Ross Barnes Visibility: 20m - 4m

Dive Results/Remarks: Dive on Brothers volcano to investigate and sample 2 cones. A very strong current moves us to the NE of the proposed landing site so we start with the N cone. 0931 On the bottom in 1379m. Talus slope. 0943 move upslope to the SE. 0953 1349m into an area with large barnacle populations and signs of hydrothermal activity. Collect barnacles. 1008 Move upslope to the SE. Into white sediment with diffused venting all around. Temp in sediment is 23°c. Continue upslope to the SE. 1026 Locate a vent with concentrated flow. Temp. 46.3°c. Collect water samples. Collect rosette samples. Collect sediment scoops. Deploy marker # 24. 1306m on rock at sample site. Move up ridge to a pinnacle. Notice vent water flowing up pinnacle wall. Drop down wall. 1129 Discover a large area of white sulfide encrustation with strong active venting. Maneuver Pisces V into a sulfide Gully to get temperatures of venting orifice. 71.4°c. 1144 1303m Moved back up to top of pinnacle. 1144 Move off of ridge to the SSW to investigate the big cone. 1200 1347m in mid water moving to the second cone. 1202 1358m In notch between two cones. Move upslope to the SSW. 1224 1249m Signs of hydrothermal alteration. Temp in sediment 17.3°c. 1234 1210m on a summit feature on top of the big cone. Searching for a "Shinkai" marker to recover a HOBO left here in October 2004. 1252 1222m On a slope covered with iron oxide deposits and hundreds of nontronite Chimneys. Collect a rosette sample of active bacterial matt. Temp. in bottom sediment 23.5°c. Very diffused venting. Move on 1323 1219m Locate large sulfur deposits. 1338 1227m Locate "Shinkai" marker and data logger. Temp at nearby vent 66.7°c. No active vents at data logger site. 1419 Collected samples. Move upslope to the NW to a ridge above the vents and deploy marker #25 in an area that will be more visible when relocating these vents. The vents are downslope to the SE of #26. Begin search for smokey plume source. Many pointy top pinnacle or welded talus stack features. 1454 1214m Locate smoking vents in a pit. Vent temp is 122°c. Collect samples. Take water samples. Move up the wall out of the pit and deploy marker # 26 in an area that will be more visible when relocating these vents. Marker #26 is at 1199m. Vents are to the SE of Marker #26. 1530 Leave the bottom from 1200m.

Equipment Deficiencies:

Pilot's Signature: Terry Kerby Date: May 24, 2005

Operations Director: Terry Kerby Date: May 24, 2005