


# OKEANOS EXPLORER ROV DIVE FORM

<b>Site Name</b>	Kawio Barat					
<b>ROV Lead</b>	Dave Lovalvo					
<b>General Area Descriptor</b>	365 km N of Bitung, Indonesia					
<b>UTC Date &amp; Time</b>	Deployment	8/2/2010 7:57 PM				
	Recovery	8/3/2008 6:53 AM				
<b>Bottom Time [HH:MM]</b>	7:44					
<b>Landing Time &amp; Location</b>	UTC Time	21:31		Depth [m]	1867	
	Latitude	4	°	40.573275	'	N
	Longitude	125	°	5.236396	'	E
<b>Off Bottom Time &amp; Location</b>	UTC Time	05:15		Depth [m]	2010	
	Latitude	4	°	40.424944	'	N
	Longitude	125	°	5.181705	'	E
<b>ROV Dive Name</b>	Cruise Season	EX1004		Leg	LEG03	
				Dive Number	ROV11 (24)	
<b>Equipment Deployed</b>	ROV:	Little Hercules				
	Camera Platform:	Phoenix Camera Platform				
<b>ROV Measurements</b>	<input checked="" type="checkbox"/> CTD	<input checked="" type="checkbox"/> Depth		<input checked="" type="checkbox"/> Altitude		
	<input checked="" type="checkbox"/> Scanning Sonar	<input checked="" type="checkbox"/> USBL Position		<input checked="" type="checkbox"/> Heading		
	<input checked="" type="checkbox"/> Pitch	<input checked="" type="checkbox"/> Roll		<input checked="" type="checkbox"/> HD Camera		
	<input checked="" type="checkbox"/> Low Res Cam 1	<input checked="" type="checkbox"/> Low Res Cam 2				
<b>Equipment Malfunctions</b>	None					
<b>Special Notes</b>	Click here to enter text.					
<b>Scientists Involved</b> <i>(please provide name / location / affiliation / email)</i>	<p>Santiago Herrera (on-board Science Lead), EX, WHOI, <a href="mailto:sherrera@whoi.edu">sherrera@whoi.edu</a>  <b>Tim Shank (on-shore Science Lead), ECC Jakarta, WHOI, <a href="mailto:tshank@whoi.edu">tshank@whoi.edu</a></b>  Rainer Troa, EX, <a href="mailto:renertroa@gmail.com">renertroa@gmail.com</a>  Eleanor Bors, ECC Seattle, WHOI, <a href="mailto:ekbors@gmail.com">ekbors@gmail.com</a>  Catriona Munro, WHOI, WHOI, <a href="mailto:c.munro@ucl.ac.uk">c.munro@ucl.ac.uk</a>  Elizabeth Sibert, WHOI, WHOI, <a href="mailto:esibert@ucsd.edu">esibert@ucsd.edu</a>  Sam Zelin, ECC Seattle, UMass Amherst  Ed Baker, ECC Seattle, NOAA, <a href="mailto:Edward.Baker@noaa.gov">Edward.Baker@noaa.gov</a>  Tryono, ECC Seattle  James Holden, UMass Amherst, UMass Amherst, <a href="mailto:jholden@microbio.umass.edu">jholden@microbio.umass.edu</a>  John Sherrin, U. Victoria, U. Victoria, <a href="mailto:jsherrin@uvic.calick">jsherrin@uvic.calick</a></p>					

**Purpose of the Dive:** To explore the extent of venting on Kawio Barat and possible high-temperature sources which have not been discovered yet. The dive would start by locating and looking at the venting on the southwest side of the crest (historical WP2) and then proceed to where we previously observed white capped sulfides and barnacles, 2) then move downslope towards the SE and then SW and deeper to explore for the source of the vent plume we observed at 1950 meters.

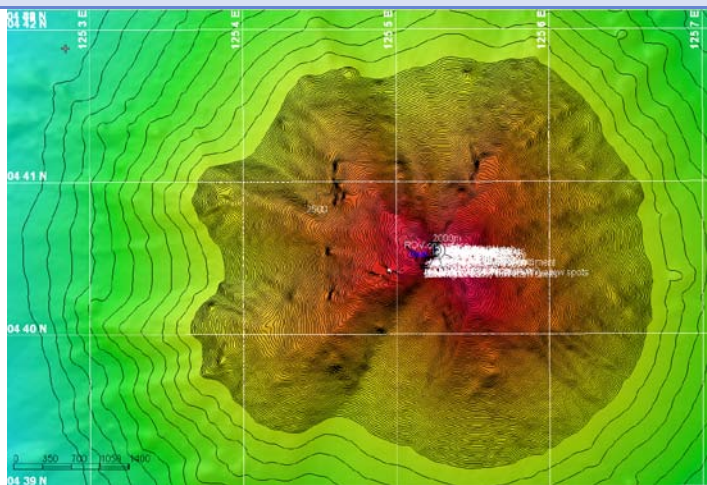
**Description of the Dive:**

This dive started at the same point as the previous two dives at this site. We transited to the "SCS wall" and re-documented this white smokers area. As we transited to this point we observed extensive white sedimentation/microbial mat along wall and possible near crest of summit. White/yellow/gray venting was observed once again. Yellow, white, gray, black and green sulfur flows were documented in detail as the event at Silver Spring took place. High abundances of shrimp were observed near the vents and large aggregations of barnacles on the periphery. Thick carpets of bacterial mat filaments were observed on pyroclastic sediments and also growing on some barnacles. Diffuse venting was observed coming from underneath sulfur flow terraces and cracks in the basalt. As we moved upslope to the top of the crest and heading south we found extensive fields of barnacles. Large spires, some active and some inactive were abundant in this area. Active spires were intensely venting clear fluids. Active and inactive spires were often seen arranged in lines, like razorbacks.

Large stalked barnacle aggregations were observed on apparently inactive spires, whereas shrimp were commonly seen as dominant on the outer walls of the active chimneys. A number of shrimp carcasses, apparently from pelagic origin, were seen during the dive. Evidence suggested that toxicity of vent fluids could be producing these deadfalls.

Vent shrimp were observed scavenging these carcasses. We followed a path of apparent chemosynthetic activity that proceeded downslope from the spire field on the southern crest slope. The heading of this trail brought us south and west to a depth of almost 2000m, when we ran out of bottom time. Continuous observations of white bacterial films, small clams in surface sediments and yellow mats of apparent iron/sulfur oxidizing bacterial/archaea aggregations (resembling "cheetos") were made along the way. No additional sources of focused venting were found.

**Overall Map of ROV Dive Area**



**Close-up Map of Main Dive Site**



**Representative Photos of the Dive**



20100803\_01h26m26s29\_ROVHD\_BARNACLES\_SPIRES\_I

As we moved upslope to the top of the crest and heading south we found extensive fields of barnacles. Large spires, some active and some inactive were abundant in this area.

20100803\_00h52m51s10\_ROVHD\_ORANGE-YELLOW\_DPST

Continuous observations of white bacterial films, clams and yellow mats of apparent iron/sulfur oxidizing bacterial/archaea aggregations (cheetos) were made.

**Please direct inquiries to:**

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