Dive Plan 4202 - 26 June 2006

Port: K. Von Damm ***Starboard:*** G. Luther ***Pilot:*** M. Spear

On Bottom Target: x = 4251 y = 78954 9°50.83392N 104°17.67956W

Objectives: Find M, recover Hobo, sample, deploy markers and settling experiments, transit via Q, and Tica to Bio9 vent area.

1. Turn on ECHEM at 200m, leave on as descend to bottom, positioned in its holster.
2. Turn on magnetometer at 1000m and do a 3 min spin clockwise and then counterclockwise, note time of spin.
3. Land on bottom ~100m west of the ASCT and 50m north of M vent.
   - turn on cameras including downlooking with booms (fly 4-5m up) ground
   - pick up a piece of 2006 flow at the landing site (or as soon as you encounter it)
   - deploy a marker at the sample site.
4. Transit ~100m E to the ASCT, cross as slowly as possible to the east wall with IMAGENIX on to get ASCT crossing profile.
5. Transit 50m south along top of east wall to M vent. 4418 78878
6. **At M vent:** **x=4401** **y=78904**
   - collect sulfide and place in grey biobox ✓ Hdg=300 Depth=2505m
   - measure T with hi T probe X 22.7
   - 2 majors pairs X
   - 2 gas tights X
   - pick up basalt (if covered with bio-material place in grey biobox)
   - recover Hobo (#6) ✓
   - deploy Hobo X
   - deploy marker. ✓ Start 2nd set of tapes at ~1800 (1759

2.7max

In Nov. 2004 M Vent was 366 °C. leaving ~18:03

7. Look around M vent area for snowblower &/or other areas of intense diffuse flow.
8. If there is 'appropriate' (vigorous, post-eruptive, white stuff - if a snowblower is found that is the 1st priority) diffuse flow at M Vent:
   - measure its T with hi or lo T probe to find the 'hottest' place
   - ECHEM to determine placement of following
   - collect 1 majors pair
   - collect 1 gas tight
   - deploy setting experiments as follows:
     - [3 'babytraps' and 3 'sandwiches'] [4 'TAMS' and 2 'rounds'] in >20°C flow
     - ECHEM on center of each TAM and round
     - 4 TAMS in ambient (non-venting) spot (move slightly?)
     - ECHEM on center mesh of each ambient TAM
   - filter slurp snowblower material
     (watch meter voltage carefully)
   - slurp early settlers off rock surface (amphipods too if present)
     - pick-up basalt with early settlers and place in grey biobox
   - deploy marker(s) as appropriate.

(If there wasn't an appropriate diffuse flow site at M, look for one while heading south.)

9. Transit south along top of E wall to Q vent.
10. **At Q vent:** **x=4408** **y=78791**
    - collect sulfide and place in grey biobox Hdg=54 Depth=2504m
    - measure T with hi T probe
    - 1 majors pair
    - 1 gas tight
    - recover Hobo (Green - old style)
    - deploy Hobo
    - sample basalt
    - deploy marker(s).

4420 278770

In Nov. 2004 Q vent was 332 ℃.

11. Get down into ASCT.
12. *Transit to Mussel Bed/East Wall* *x=4541* *y=78502* *d=2501*
    - *evaluate as possible diffuse site* *x=4557* *y=78430* *d=2503*

13. **Transit south to Tica Vent.** **x=4580** **y=78181**
14. At Tica vent: Hdg=209 Depth=2511m
    - collect sulfide and place in grey biobox
    - measure T
    - 1 majors pair
    - 1 gas tight
    - recover Hobo (Red-old)
    - deploy Hobo if appropriate
    - sample basalt
    - deploy marker(s).

In Nov. 2004 Tica vent was 353 ℃.

15. If diffuse flow/settlement experiment was not done at M, do it here if there is an appropriate site.
16. Look for *Riftia*.
17. If any *Riftia* remain, place in clear biobox.
18. *Drive back and forth across ASCT at wall height with IMAGENIX.*

19. **Transit south to Bio9 Vent Area:** **x=4618** **y=77974**
20. At Bio9 Vent Area: Hdg=108 Depth=2511
    - recover Hobos (#3=Bio9, #1=Bio9', #4=Bio9")
    - measure current T with hi T probe
    - deploy marker(s)
    - evaluate for resprobe deployment
    - if slurps not done, or settling experiments not deployed yet, do that here.

In Nov. 2004 Bio9 was 386°C, Bio9' was 384°C, Bio9" was 376°C.

21. Drive back and forth across ASCT at wall height with IMAGENIX.

Continue south as time permits.

BE SURE TO IMAGE AND DOCUMENT EVERYTHING AND LOOK FOR FUTURE SAMPLING SITES. DROP ADDITIONAL MARKERS AS NEEDED and to test launchers.