

## AT15-12 Vent Sites at 9 50' N EPR

Compiled by Monika Bright, with additions by Stace Beaulieu 17 Nov 2006

### New Site: 2in1

X4381 Y79852 9.8553555,-104.2934786 2508m

Two areas, one with patches of white bacterial mats, the other one on the eastern wall of steep, narrow ASCT with lots of diffuse flow and *Tevnia*, not accessible for Alvin.

### BioVent

19:29 – 19:34 GMT Dive 4268 (position from renav: 4368.27, 79199.45)

2 smokers with *Alvinella*, surrounded by pillow lava, white bacterial mats in cracks; Diffuse flow in vicinity with bacterial mats and limpets observed on Dive 4261 at 21:28 GMT (position from renav: 4385.58, 79151.09).

### M-Vent

X4420 Y78877 9.84653485,-104.2931228 2500m

Inactive smoker. RESET Marker 13, note lava pooled at base.

### Q-Vent

Inactive smoker with dead *Alvinella* tubes; swarms of amphipods around it and also in some of the basalt areas there are these amphipods. HOBO 20 and RESET Marker 1.

Deployment site of Monika's sponges on sulfide and on peripheral basalt

X4428 Y78783 9.84568802,-104.2930481 2502m

### Mussel Bed

No diffuse flow, appears to be filled in with new basalt.

### East Wall

No vigorous diffuse flow; large accumulations of mussel shells and tubes of *Riftia*; also on higher parts of East Wall some patches of mussel shell and tubes of *Riftia* that appear to be in original place and have not been covered with lava; also some patches with live mussels *Bathymodioulus thermophilus*. LoT probe up to 4.11 C.

Deployment site of Monika's devices in patch of dead shells, tubes, and peripheral basalt

X4557 Y78425 9.84244979,-104.29187930 2500m

### New Site: StaBB, north of Tica

New diffuse vent in ASC near East Wall

18:19 – 18:22 GMT Dive 4273 (renav not yet available; ~150m N of Tica)

Estimate ~2.5-3m square with abundant *Tevnia* and vigorous diffuse flow. Bythograeids abundant. Deployed marker DSX. LoT probe up to 17.1 C.

## Tica

**X 4580 Y 78174 9°50.41' N 104° 17.5' W**

Renav position for live *Riftia*: X 4583.84, Y 78158.74

Still very active area of diffuse flow, although no black smoker, several patches of *Tevnia* on the false eastern wall of ASCT and also in ASCT, back side towards the east has also a patch of *Tevnia*; a few live *Riftia* and mussels (survivors); one patch found with *Alvinella/Tevnia*.

Deployment site of Lauren's and Monika's devices in *Tevnia* and adjacent low flow and peripheral basalt area, this cruise

**4577 78163 9.84007819,-104.29169255 2510 m**

Note: Florence also has TRACs deployed at Tica to be recovered on Dec. cruise.

## Bio 9 area

A series of small chimneys. Alvinellid Stump is now a smoker complex (multiple chimneys). Large table (southern) structure now a smoker complex with multiple spires (> 20 spires). Rusty *Riftia* field (10 m off complex) is gone.

Shape of Bio9 same as preeruption. Bio 9 prime and Bio9 proper are still recognizable according to Pat Hickey.

Deployment site of Monika's and Florence's devices on *Alvinella* patch this cruise

**X4615 Y77968 9.83831725,-104.291345 2508m**

Nearby, in depression, is "FishHole" area from which Shannon's elevator was recovered on Dive 4269 at 16:01-16:13 GMT (renav position: 4612.29, 77958.34). This area had diffuse flow with *Tevnia* and bacterial mats.

## Hole-to-Hell (part of the Bio9 complex).

**X4608.66 Y78005.31 9.83865397,-104.29140542**

series of multiple smokers/smoker field (where the old marker should be), *Riftias* are extinct, *Alvinella*

## P Vent

Still active, first higher spire is clear, second lower one is gushing; with *Alvinella* on sulfide walls, with patches of *Tevnia*, one large, old *Riftia*. RESET Marker 10 and HOB0 21.

**RESET Marker 5, new marker L-O**

**X4627 Y77910 9.83779342, -104.2912346 2508m**

Deployment site for Lauren's sandwiches from RESET cruise;

Deployment site of Lauren's and Monika's devices in *Tevnia* area and on peripheral basalt, this cruise.

## Alvinella Pillar

Not found

## Ty-Io area

Smoker area

**X 4672 Y 77616 9.83513076, -104.2908315, 2504m**

It is not clear whether this is Ty or Io smokers. A series of several small to a few meters high black smokers with extensive *Alvinella* populations is present.

Diffuse flow area (including Marker 8/11 and L-M Deployment site) extends towards the south with many patches of diffuse flow, white bacterial mats, fish, limpets and both bythograeid and galatheid crabs and patches of *Tevnia* up to 30 cm length, most *Tevnia* patches are probably not accessible for Alvin.

**Marker 8/11:**

**X4677 Y77598 9.83497603, -104.2907814 2504m**

Recoveries of Lauren's sandwiches and Monika's TASCs and sponges from RESET cruise were conducted very carefully without disturbing any other deployment devices. No devices were deployed here on this cruise.

**New Site: Sketchy**

**L-M Deployment site, new marker S** (renav position 20:00 GMT Dive 4269: 4684.30, 77523.67):

**X4682 Y77523 9.83429557, -104.2907302 2506m**

Deployment site of Lauren's and Monika's devices in *Tevnia* patch and adjacent peripheral basalt, this cruise. Relatively narrow fissure with submersible access at 180degrees, then turning to 150degrees to manipulate colonization experiments.

**New Site: Finn – (Old Marker 119?)**

Thriving *Tevnia*, extensive bacterial mat along crack.

**X4706 Y77331 9.83255759, -104.2905167 2504**

along the steep, eastern wall of ASCT, but not accessible, on top of ASCT may be some place where deployments or collections are possible.

**L-4 1 Marker (Old Marker 141?)**

**X 4743 Y77137 9.83079832, -104.29018524**

deployed just to the left of ledge,

Several collapse pits, two of which had extensive *Tevnia* clumps

**Tubeworm Pillar**

Did not find.

**Choo-choo**

**X4807 Y76714 9.82698077, -104.28959748**

Paved with new basalt, patches of diffuse flow.

**Choo-choo new**

**X4841 Y76547 9.82546496, -104.28929615**

Not in original location anymore. Found Choo-choo marker (flag is partially paved, says marker 371) and dead mussel community 170 m south of original location.