Dive Plan 4905– May 7, 2017

Port: Ileana Perez-Rodriguez ***Starboard:*** Sushmita Patwardhan ***Pilot:*** Jefferson Grau

On Bottom Target: LVP landing site

Objectives:

- Deploy LVP at Teddy Bear (starts pumping at 10:30/16:30)
- Fire 6 majors at Crab Spa
- Collect dead Riftia between Wedding Cake and Cup Cake
- Release LVP at 14:30 (20:30) at Teddy Bear

Basket List

1. Large biobox
2. 6 majors
3. T probe

Locations:	**Lat**	**Long**	**m**	**x**	**y**
Pvent	9 50.276	104 17.474	2511	4628	77926
Bio9	9 50.296	104 17.476	2514	4624	77962
Crab Spa MkF	9 50.396	104 17.489	2505	4600	78147
Tica	9 50.406	104 17.490	2505	4598	78165
Teddy Bear	9 50.50	104 17.51	2514		

1. On bottom, transit to LVP
2. Put in wand of LVP in previously used crack
3. Move to Crab Spa
4. Fire 6 majors at Crab Spa, aim at temperature of 25ºC
5. Proceed to area between Wedding Cake and Cup Cake
6. There is a large clump of what appears to be dead Riftia
7. Measure T in Riftia clump
8. Collect about 6 Riftia and put in biobox

9. If time before releasing the LVP, collect small Riftia in Riftia patch near Teddy Bear and put with dead Riftia
10. Move to Teddy Bear to release LVP at 14:30 (20:30)

Alvin Dive 4905-AT 37-12
May 8, 2017

Pilot: Jefferson Grau
Port: Ileana Pérez-Rodríguez
Starboard: Sushmita Patwardhan
Notes are from Ileana Pérez-Rodríguez

GMT	Comments
13:55	Descending
15:17	At sea floor
15:47	At LVP landing site. Picked up LVP for deployment at 'Teddy Bear'
16:29	Settled LVP next to 'Teddy Bear'. Removed wand from LVP, but the nozzle (wand) fell off. Re-assembled nozzle into sampling hose.
16:48	Placed LVP's wand into crack on 'Teddy Bear'. Temperature at site was 11.7 °C. After, we started our transit into 'Crab Spa'.
17:15	At 'Crab Spa' we started taking fluid samples with green major. Both chambers fired and fluid samples were taken between 24.1 and 25.6 °C.
17:20	Picked up yellow major for sampling. Temperature in ICL read between 19.2 to 21 °C for ambient conditions (not reliable ICL). Access to 'Crab Spa' site was difficult given the reach of major nozzle. Therefore, the pilot proceeded to clear some rocks from the area for better access.
18:11	Picked up blue major for sampling. Both chambers fired and fluid samples were taken at temperatures between 24 and 25.2 °C.
18:27	Picked up red major for sampling. We had a hard time accessing the venting source (likely due to angle in major's nozzle), so we ended up firing both chambers and collecting fluid samples at temperatures between 17 and 19°C.
18:38	Picked up black major for sampling. Both chambers fired and fluid samples were taken at temperatures of 23 °C.
18:44	Picked up white major for sampling. Only the second chamber fired and fluid samples were taken at temperatures of 25 °C. Once the second chamber was full, we re-tried firing the first chamber but efforts were unsuccessful.
19:10	Picked up yellow major for sampling. This time, temperature in ICL read 17 °C for ambient conditions (not reliable ICL). Both chambers fired and fluid samples were taken at temperatures of 35 °C. Once done we moved towards the 'Wedding Cake/Cupcake' area.
19:41	We moved to the bottom of the 'Wedding Cake' Alvinella structure to collect dead Riftia tubes. We measured temperature at base (2.4 °C) and on top (2.6 °C) of what seemed like a dead Riftia patch of tubeworms. We collected ~5-6 tubes and placed them in the biobox of DSV Alvin's basket. Once we finished, we started our transit back to 'Teddy Bear'.

~20:00	Arrived to 'Teddy Bear' where we parked and rested batteries while waiting for the LVP to finish it's sample collection.
20:31	Removed LVP's wand from 'Teddy Bear' and released LVP. Next, we went north of 'Teddy Bear' to pick up some healthy Riftia tubeworms.
20:39	Arrived at Riftia patch. We measured temperature at base (24.5 °C) and on top (8.5 °C) of what seemed like a healthy Riftia patch of tubeworms. We collected ~4-5 tubes and placed them in the biobox of DSV Alvin's basket (together with the dead Riftia tubes). After, we moved off-axis where we waited for the LVP to be secured on deck of R/V Atlantis.
21:54	Ascending
22:55	Alvin surfaced.

AT 37-12 Sample Sheet

Alvin Dive# 4905 **Date** 05/08/17 **Logged by** Ileana Peiez-Rodríguez
Port Obs. Ileana P.R. **Starboard Obs.** Sushmita Patwardhan **Pilot** Jefferson Grau
Descend 13:55 GMT **At seafloor** 15:17 GMT **~~Ascend~~ Gained** 22:55 GMT

FLUID SAMPLES

Lowest: 24.1°C to surface
Highest: 25.6°C

Major# Green Time 17:15 Temp ICL _____ Vent Crab Spa
X 4593 Y 7816 Hdg 56 Depth 2506 Alt 0 Marker _____(type/#)
Comments • Reading ambient temperatures well

Major# Yellow Time 17:20 Temp ICL _____ Vent Crab Spa
X 4593 Y 7816 Hdg 55 Depth 2506 Alt 0 Marker _____(type/#)
Comments • ambient temperature reading Between 19.5°C to 21°C
• we removed rocks for Better access (AND didn't fire Yellow major at this time)

Major# Blue Time 18:11 Temp ICL 24-25.2°C Vent Crab Spa
X 4594 Y 7816 Hdg 41 Depth 2505 Alt 0 Marker _____(type/#)
Comments • ambient reading at 2°C (reading well)

Major# Red Time 18:27 Temp ICL 17-19°C Vent Crab Spa
X 4594 Y 7816 Hdg 35 Depth 2506 Alt 0 Marker _____(type/#)
Comments • ambient reading at 2°C (good read)

Major# Black Time 18:38 Temp ICL 23°C Vent Crab Spa
X 4595 Y 7816 Hdg 31 Depth 2506 Alt 0 Marker _____(type/#)
Comments ambient temperature at 3°C (good read)

Major# White Time 18:44 Temp ICL 25°C Vent Crab Spa
X 4595 Y 7816 Hdg 31 Depth 2506 Alt 0 Marker _____(type/#)
Comments ambient temperature at 2°C (good read)
• Major I did not fire

MAJOR: Yellow Time: 19:10 Temp. ICL: 35°C Vent: Crab Spa
X: 4595 Y: 7816 Hdg: 40 Depth: 2506 AH: 0
Comments: Ambient temperature reading at 17°C (Bad read)

BIOLOGICAL SAMPLES

Take photos before collection, in the claw (if possible), and after collection.

If needed, make sketches with scales.

Sample # 1 Time 19:41 Temp 2.4°C (Base) 2.6°C (top) Vent Bottom of "Wedding cake"
X 4584 Y 7816 Hdg 61 Depth 2515 Alt 0 Marker _____(type/#)
Sample type Dead Riftia tubes
Basket location BioBox

Assoc. water sample # ________ Assoc. rock sample # ________ (type) ________
Description of associated fauna &/or type of venting ________

Sample # 2 Time 20:39 Temp Top of Short tubeworms: 8.5°C Base: 24.5°C Vent North of Teddy Bear
X 4565 Y 7840 Hdg 316 Depth 2514 Alt 0 Marker ________ (type/#)
Sample type Healthy Riftia tubeworms (~5 tubes)
Basket location Bio Box together with dead Riftias
Assoc. water sample # ________ Assoc. rock sample # ________ (type) ________
Description of associated fauna &/or type of venting ________

Sample # ________ Time ________ Temp ________ Vent ________
X ________ Y ________ Hdg ________ Depth ________ Alt ____ Marker ________ (type/#)
Sample type ________
Basket location ________
Assoc. water sample # ________ Assoc. rock sample # ________ (type) ________
Description of associated fauna &/or type of venting ________

Sample # ________ Time ________ Temp ________ Vent ________
X ________ Y ________ Hdg ________ Depth ________ Alt ____ Marker ________ (type/#)
Sample type ________
Basket location ________
Assoc. water sample # ________ Assoc. rock sample # ________ (type) ________
Description of associated fauna &/or type of venting ________

Sample # ________ Time ________ Temp ________ Vent ________
X ________ Y ________ Hdg ________ Depth ________ Alt ____ Marker ________ (type/#)
Sample type ________
Basket location ________
Assoc. water sample # ________ Assoc. rock sample # ________ (type) ________
Description of associated fauna &/or type of venting ________

Sample # ________ Time ________ Temp ________ Vent ________
X ________ Y ________ Hdg ________ Depth ________ Alt ____ Marker ________ (type/#)
Sample type ________
Basket location ________
Assoc. water sample # ________ Assoc. rock sample # ________ (type) ________
Description of associated fauna &/or type of venting ________

Sample # ________ Time ________ Temp ________ Vent ________
X ________ Y ________ Hdg ________ Depth ________ Alt ____ Marker ________ (type/#)

Sample type ______
Basket location ______
Assoc. water sample # ______ Assoc. rock sample # ______ (type) ______
Description of associated fauna &/or type of venting______

ROCK SAMPLES

Take photos before collection and in the claw. If needed, make sketches w/ scales.

Sample # ______ Time ______ Temp ______ Vent ______
X ______ Y ______ Hdg ______ Depth ______ Alt ____ Marker ______(type/#)
Sample type ______ Basket location ______
Assoc. water sample # ______ Assoc. biol. sample # ______ (type) ______
Descriptive comments ______

Sample # ______ Time ______ Temp ______ Vent ______
X ______ Y ______ Hdg ______ Depth ______ Alt ____ Marker ______(type/#)
Sample type ______ Basket location ______
Assoc. water sample # ______ Assoc. biol. sample # ______ (type) ______
Descriptive comments ______

Sample # ______ Time ______ Temp ______ Vent ______
X ______ Y ______ Hdg ______ Depth ______ Alt ____ Marker ______(type/#)
Sample type ______ Basket location ______
Assoc. water sample # ______ Assoc. biol. sample # ______ (type) ______
Descriptive comments ______

Sample # ______ Time ______ Temp ______ Vent ______
X ______ Y ______ Hdg ______ Depth ______ Alt ____ Marker ______(type/#)
Sample type ______ Basket location ______
Assoc. water sample # ______ Assoc. biol. sample # ______ (type) ______
Descriptive comments ______

Sample # ______ Time ______ Temp ______ Vent ______
X ______ Y ______ Hdg ______ Depth ______ Alt ____ Marker ______(type/#)
Sample type ______ Basket location ______
Assoc. water sample # ______ Assoc. biol. sample # ______ (type) ______
Descriptive comments ______

EXPERIMENT DEPLOYMENTS/RECOVERIES

Take photos before and after deployment or recovery. Make sketches with scales.

Expt ID/# AT 37-12 Dive 4905 Time 15:47 Temp _____ Vent LVP Landing Site
X 4441 Y 7821 Hdg 59 Depth 2504 Alt 0 Marker _____(type/#)
Description of associated fauna &/or type of venting Some sea cucumbers in the area
Additional assoc. samples: type/ID _____
Additional descriptive comments Picking up LVP

Expt ID/# AT 37-12 Dive 4905 Time 16:29 Temp 11.7°C Vent Teddy Bear
X 4557 Y 7837 Hdg 335 Depth 2516 Alt 0 Marker _____(type/#)
Description of associated fauna &/or type of venting Saw octopus and some anemonies (and, of course) ~Riftias
Additional assoc. samples: type/ID _____
Additional descriptive comments Deploying LVP at Teddy Bear's crack ◦ Nozzle fell of and pilot had to put back in. WAND went in crack at 16:48 (about 20 min. later)

Expt ID/# _____ Time 20:31 Temp _____ Vent Teddy Bear
X 4564 Y 7837 Hdg 0 Depth 2514 Alt 0 Marker _____(type/#)
AT 37-12 Dive 4905
Description of associated fauna &/or type of venting _____
Additional assoc. samples: type/ID _____
Additional descriptive comments Removed LVP's wand from Teddy Bear and Released LVP.

Expt ID/# _____ Time _____ Temp _____ Vent _____
X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)
Description of associated fauna &/or type of venting _____
Additional assoc. samples: type/ID _____
Additional descriptive comments _____

Expt ID/# _____ Time _____ Temp _____ Vent _____
X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)
Description of associated fauna &/or type of venting _____
Additional assoc. samples: type/ID _____
Additional descriptive comments _____

MARKERS DEPLOYED

Time _____ Marker type _____ Marker # _____

X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)

Reason/ assoc. sample(s) _____

Comments _____

Time _____ Marker type _____ Marker # _____

X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)

Reason/ assoc. sample(s) _____

Comments _____

Time _____ Marker type _____ Marker # _____

X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)

Reason/ assoc. sample(s) _____

Comments _____

ADDITIONAL NOTES:

AT 37-12 Sample Sheet

Alvin Dive# 4905 **Date** 5/8/17 **Logged by** Sushmita Patwardhan

Port Obs. Ileana Perez-Rodriguez **Starboard Obs.** Sushmita Patwardhan **Pilot** Jefferson Grau

Descend: 13:55 **At Seafloor:** 15:35 **Ascend:** 21:54

FLUID SAMPLES

Major# Green Time 17:14 Temp ICL 25.16 Vent Crab Spa

X 4592 Y 78166 Hdg 55.6 Depth 2502 Alt 0 Marker _____(type/#)

Comments 19.5 Ambient T: Tried getting 40°C for some time

Major# Yellow Time 17:20 Temp ICL 32-35.17 Vent Crab Spa

X 4591 Y 78160 Hdg 41.2 Depth 2505 Alt 0 Marker _____(type/#)

Comments Had to take the rock out, once again at 18:06, Revisited shimmering increased

Major# Blue Time 18:20 Temp ICL 24-25 Vent Crab Spa

Ambient: 2°C

X 4591 Y 78160 Hdg 41.4 Depth 2505 Alt 0 Marker _____(type/#)

Comments had to take some more rock out

Major# Red Time 18:27 Temp ICL 17-19C Vent Crab Spa

Ambient 2°C

X 4595 Y 78166 Hdg 34 Depth 2506 Alt 10 Marker _____(type/#)

Comments _____

Major# Black Time 1838 Temp ICL 23 Vent Crab Spa

Amb 3°C

X 4595 Y 78166 Hdg 32 Depth 2506 Alt 0 Marker _____(type/#)

Comments _____

Major# White Time 18:44 Temp ICL 25.4 Vent Crab Spa

Amb 2°C

X 4595 Y 78160 Hdg 32 Depth 2506 Alt 0 Marker _____(type/#)

Comments Only W2 fired

BIOLOGICAL SAMPLES

Take photos before collection, in the claw (if possible), and after collection.

If needed, make sketches with scales.

Sample # Dead Riftia Time 19:42 Temp 2.5 Vent Bel^n Wedding cupcake.

X 4584 Y 78167 Hdg 61 Depth 2515 Alt 0 Marker _____(type/#)

Sample type 6 Dead Riftia

Basket location Biobox

Assoc. water sample # ________ Assoc. rock sample # ________ (type) ________
Description of associated fauna &/or type of venting________________

Sample # Healthy Rif Time 20:40 Temp 8.5 Base: 24.5 Vent Near Teddy Bear
X 4565 Y 78403 Hdg 316 Depth 2514 Alt 0 Marker ________(type/#)
Sample type ________________
Basket location ________________
Assoc. water sample # ________ Assoc. rock sample # ________ (type) ________
Description of associated fauna &/or type of venting________________

Sample # ________ Time ________ Temp ________ Vent ________
X ________ Y ________ Hdg ________ Depth ________ Alt ____ Marker ________(type/#)
Sample type ________________
Basket location ________________
Assoc. water sample # ________ Assoc. rock sample # ________ (type) ________
Description of associated fauna &/or type of venting________________

Sample # ________ Time ________ Temp ________ Vent ________
X ________ Y ________ Hdg ________ Depth ________ Alt ____ Marker ________(type/#)
Sample type ________________
Basket location ________________
Assoc. water sample # ________ Assoc. rock sample # ________ (type) ________
Description of associated fauna &/or type of venting________________

Sample # ________ Time ________ Temp ________ Vent ________
X ________ Y ________ Hdg ________ Depth ________ Alt ____ Marker ________(type/#)
Sample type ________________
Basket location ________________
Assoc. water sample # ________ Assoc. rock sample # ________ (type) ________
Description of associated fauna &/or type of venting________________

Sample # ________ Time ________ Temp ________ Vent ________
X ________ Y ________ Hdg ________ Depth ________ Alt ____ Marker ________(type/#)
Sample type ________________
Basket location ________________
Assoc. water sample # ________ Assoc. rock sample # ________ (type) ________
Description of associated fauna &/or type of venting________________

Sample # ________ Time ________ Temp ________ Vent ________
X ________ Y ________ Hdg ________ Depth ________ Alt ____ Marker ________(type/#)

Sample type ______________________________

Basket location ______________________________

Assoc. water sample # ________ Assoc. rock sample # ________ (type) ________

Description of associated fauna &/or type of venting______________________

ROCK SAMPLES

Take photos before collection and in the claw. If needed, make sketches w/ scales.

Sample # __________ Time ________ Temp ______________________ Vent ________

X ________ Y ________ Hdg ________ Depth ________ Alt ____ Marker ________(type/#)

Sample type ______________________ Basket location ______________________

Assoc. water sample # ________ Assoc. biol. sample # ________ (type) ________

Descriptive comments ______________________________

Sample # __________ Time ________ Temp ______________________ Vent ________

X ________ Y ________ Hdg ________ Depth ________ Alt ____ Marker ________(type/#)

Sample type ______________________ Basket location ______________________

Assoc. water sample # ________ Assoc. biol. sample # ________ (type) ________

Descriptive comments ______________________________

Sample # __________ Time ________ Temp ______________________ Vent ________

X ________ Y ________ Hdg ________ Depth ________ Alt ____ Marker ________(type/#)

Sample type ______________________ Basket location ______________________

Assoc. water sample # ________ Assoc. biol. sample # ________ (type) ________

Descriptive comments ______________________________

Sample # __________ Time ________ Temp ______________________ Vent ________

X ________ Y ________ Hdg ________ Depth ________ Alt ____ Marker ________(type/#)

Sample type ______________________ Basket location ______________________

Assoc. water sample # ________ Assoc. biol. sample # ________ (type) ________

Descriptive comments ______________________________

Sample # __________ Time ________ Temp ______________________ Vent ________

X ________ Y ________ Hdg ________ Depth ________ Alt ____ Marker ________(type/#)

Sample type ______________________ Basket location ______________________

Assoc. water sample # ________ Assoc. biol. sample # ________ (type) ________

Descriptive comments ______________________________

EXPERIMENT DEPLOYMENTS/RECOVERIES

Take photos before and after deployment or recovery. Make sketches with scales.

Expt ID/# Located LVP Time 15:47 Temp _____ Vent _____
X 4442 Y 7822 Hdg 58 Depth 2504 Alt 0 Marker _____(type/#)
Description of associated fauna &/or type of venting _____
Saw an octopus
Additional assoc. samples: type/ID _____
Additional descriptive comments _____

Expt ID/# Deployed LVP w site Time 16:38 Temp ~~10~~ 11.7 Vent Teddy Bear
X 4556 Y 7870 Hdg 334 Depth 2515 Alt 1.68 Marker _____(type/#)
Description of associated fauna &/or type of venting _____
Saw lots of crabs & 2 octopus mating
Additional assoc. samples: type/ID _____
Additional descriptive comments _____

Expt ID/# Released LVP Time 20:39 Temp _____ Vent _____
X 4564 Y 7876 Hdg 168 Depth 2514 Alt 0 Marker _____(type/#)
Description of associated fauna &/or type of venting _____
Additional assoc. samples: type/ID _____
Additional descriptive comments _____

Expt ID/# _____ Time _____ Temp _____ Vent _____
X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)
Description of associated fauna &/or type of venting _____
Additional assoc. samples: type/ID _____
Additional descriptive comments _____

Expt ID/# _____ Time _____ Temp _____ Vent _____
X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)
Description of associated fauna &/or type of venting _____
Additional assoc. samples: type/ID _____
Additional descriptive comments _____

MARKERS DEPLOYED

Time _____ Marker type _____ Marker # _____
X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)
Reason/ assoc. sample(s) _____
Comments _____

Time _____ Marker type _____ Marker # _____
X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)
Reason/ assoc. sample(s) _____
Comments _____

Time _____ Marker type _____ Marker # _____
X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)
Reason/ assoc. sample(s) _____
Comments _____

ADDITIONAL NOTES: