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	У
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 25°C
- 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

- 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 $^{\circ}$ C) and
	on top (8.5 °C) of what seemed like a healthy Riftia patch of
	tubeworms. We collected \sim 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 Peier-Rodnquez Port Obs Ileana P.R. Starboard Obs Sushming Patword Pilot Jefferson Grau Descend 13:55 GMT At seafloor 15:17 GMT Ascend 20:55 GMT

FLUID SAMPLES

Major# Green Time 17:15 Temp ICL Temp ICL Vent Crab Spa X 4593 Y 7816 Hdg 56 Depth 2506 Alt O Marker (type/#) Comments * Reading ambient temperatures well Major# Yellow Time 17:20 Temp ICL Vent Crab Spa

X 4579 Y 7816 Hdg 55 Depth 2506 Alt 0 Marker (type/#)

Comments ambient temperature reading Between 19.5°C to 21°C

• We removed tacks 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 combient 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 O Marker (type/#) Comments · aminent reading at 2°C (good read) Major# Black Time 18:38 Temp ICL 33°C Vent Crab Spa X 4575 Y 7816 Hdg 31 Depth 2506 Alt O 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: Yelbu Time: 19:10 Temp. ICL: 35°C Vent: Crab Spa X: 4595, Y=7816 Hdg: 40 Deptn: 2500 AH: O Comments: Ambient temperature reading at 17°C (Bad read) Take photos before collection, in the claw (if possible), and after collection. If needed, make sketches with scales. 2.4°C (Base) Sample # 1 Time 19:41 Temp 2.60 C (top) Vent "Wedding cate X <u>4584</u> Y <u>7816</u> Hdg <u>61</u> Depth <u>3515</u> Alt <u>0</u> Marker _____(type/#) Sample type Dead Piftia tuBes

			. rock sample # _				
Description of a	ssociated fauna		of venting				
Sample #	Time <u>20:39</u>	Temp _	Base: 24.5	oc C	5:8.5°C	_ Vent	North of Teddy Bea
X4565 Y	7840 Hdg	316	Depth 2514	Alt C	Marker		(type/#)
	Sample type _/	Healthy	Piftin to	Benoy	ms (25	tas	25)
	Basket location	Bio Z	Box toxtno	4 wi-	th dead 1	e; Sti	as
Assoc. water sa			rock sample # _				
			of venting				
Sample #	Time	Temp				Vent	
X Y	Hdg		Depth	Alt	Marker		(tvpe/#)
			rock sample # _				-
			of venting				
Sample #	Гіте	Temp				Vent	
			Depth				
			rock sample # _				
			of venting				
Sample #	Гіте	Temp _				Vent	
			Depth				
Assoc. water sai	mple #	_ Assoc.	rock sample # _		(type)		
			of venting				
Sample #	Гіте	Temp _				_ Vent	
			Depth				
	Sample type						-
			rock sample # _				
			of venting				
Sample #	Гіте	Temp _				_Vent	
			Depth				

	Sample ty	/pe						
	Basket lo	cation _						
Assoc. wa	ater sample #		Assoc.	rock sample #		(type)		
Description	on of associated	fauna 8	k/or type	of venting				
ROCK SAMPLE								
Take photos be	efore collectio	n and	in the c	law. If needed,	make	sketches w	/ scal	es.
Sample #	Time		Temp _				_Vent_	
X	Y	Hdg_	8	Depth	Alt	Marker		_(type/#)
Sample t	уре			Basket location _				
Assoc. w	ater sample #		_ Assoc.	biol. sample #		_ (type)		
Descripti	ve comments					- Area -		
Sample #	Time	-	Temp _				_ Vent	
X	Υ	_ Hdg _		Depth	_ Alt	Marker		_(type/#)
Sample 1	type			Basket location _				
Assoc. w	ater sample # _		_ Assoc	biol. sample # _		_ (type)		
Descript	ive comments							
Sample #	Time		Temp _				_ Vent	
X	Y	_ Hdg _		_ Depth	_ Alt _	Marker _		_(type/#)
Sample	type			Basket location			19	
Assoc. v	vater sample # _		_ Assoc	. biol. sample # _		(type)		
Descript	ive comments _							
Sample #	Time		Temp _	-			_ Vent	
X	Y	_ Hdg		_ Depth	_ Alt _	Marker _		(type/#)
Sample	type			Basket location				
Assoc. V	water sample # _		_ Assoc	biol. sample # _		(type)		
Descript	tive comments _							
Sample #	Time		Temp _				_ Vent	
X	Y	_ Hdg		Depth	_ Alt _	Marker _		(type/#)
Sample	type			_ Basket location				
				c. biol. sample # _				
Descrip	tive comments _							

EXPERIMENT DEPLOYMENTS/RECOVERIES

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

Expt ID	1# Dive 4905	Time <u>15:4</u>	<u>7</u> Temp	Vent	P Landing ?	site
	×4441 Y 7	1821 Hdg	59 Depth 2	504 Alt C	Marker	(type/#)
	Description of as	sociated fauna	&/or type of venting	Some Se	acucumbe	1s in the
	ara					
	Additional assoc.	samples: type/	Picking u			
	Additional descrip	otive comments	Picking u	PLVP		
Expt ID	AT 37-12- 1#Dive 4905	Time <u>/6: 2</u>	1_ Temp //.7º	C Vent Tea	ddy Bear	
	X 4557 Y 7	1837 Hdg_	335 Depth <u>2</u>	516 Alt C	Marker	(type/#)
/	Description of as	sociated fauna	&/or type of venting			0 (1)
	Saw octopus	and some	e anemonie.	and, ot	course)	Rittlas
	Additional assoc.	samples: type/	ID		+ 13	4
a A	Additional descrip	otive comments	Deploying C had to put B ter)	UP at 1	eddy Bear	Scrack
i	6:48 (980)7	20 min. la	ter) reput b	ack in . I	MAND WENT	in crack a
Expt ID	J#	Time <u>20:3</u>	Temp	Vent <u> </u>	ddy Beal	
7 37-12			O Depth 2			
The 4905	Description of as:	sociated fauna	&/or type of venting			
	Additional cases	acmulac: tunal	ID.			
	Additional assoc.		Removed LVI	P 15 1476 4 1	for Todd	Banc Gal
	Additional descrip		eleased CVF		Crom Jeday	TRAI and
Expt ID	<i>I</i> #		Temp		X.	
						(type/#)
			&/or type of venting			
	3					
	Additional assoc.	samples: type/	ID			
Expt ID	/#	Time	Temp	Vent		
			Depth			(type/#)
			&/or type of venting			
	Additional assoc.	samples: type/	ID			

MARKERS DEPLOYED

Time		Marker type _		Marker #	
X	_ Y	Hdg	Depth	Alt Marker _	(type/#)
Reason/ as	ssoc. sar	mple(s)			
Time		Marker type _	20	Marker #	
X	_ Y	Hdg	Depth	Alt Marker _	(type/#)
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Comments					
Time		Marker type _		Marker #	
X	_ Y	Hdg	Depth	Alt Marker _	(type/#)
Reason/ as	ssoc. sar	mple(s)			
		:			

ADDITIONAL NOTES:

AT 37-12 Sample Sneet
Alvin Dive# 4905 Date 5/8/17 Logged by Sushmita Patwardhan
Port Obs. Ileana Perez-Rodri Starboard Obs. Sushmila Potwer Pilot Tefferson Gray
Descend: 13:55 At Seafloor: 15:35 Ascend: 21:54
FLUID SAMPLES
Major# (TVPQ) Time 17:14 Temp ICI 25 16 Vent Crop 5 20
Major# (5 V PON _ Time _ 17 14 _ Temp ICL _ 25 16 _ Vent _ Cresh S.p.c (type/#)
Comments 19.5
CommentsAmbient T= Triedgelling 467 for some
Major# Yellow Time 17 20 Temp ICL 32-35 Vent Orab Spa Hime X 4591 Y 78160 Hdg 41-2 Depth 2505 Alt 0 Marker (type/#) Revisited Again
$X = \frac{4591}{73160}$ Hdg $\frac{41.2}{205}$ Depth $\frac{2505}{205}$ Alt $\frac{6}{200}$ Marker $\frac{1}{2000}$ (type/#)
Comments Had to take the vock out, once again at 18:06, Shimmoung invitasis Ambient:2°C
ambient :2°C
Major# Blue. Time 18:00 Temp ICL 24-25 Vent Chab Spec X 4591 Y 78160 Hdg 41.4 Depth 2505. Alt 0 Marker (type/#)
Comments Had to take some move fock out
Abording 1 26.
Major# Red Time 18:27 Temp ICL 17-19 (Vent Crabs pa.
X 459 5 Y 78160 Hdg 34 Depth 2506 Alt 3 0 Marker (type/#)
Comments
Amb 3°C
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Comments
Majort IN his la Time 18:44 Town 181 24 I Was Concle Co. C.
Major# While Time $18:44$ Temp ICL 25.4 Vent Crab Sp 9 X 4595 Y 18160 Hdg 32 Depth 2506 Alt 0 Marker (type/#)
Comments
BIOLOGICAL SAMPLES
Take photos before collection, in the claw (if possible), and after collection.
If needed, make sketches with scales.
Sample # Dead Riftid Sample # Dead Time 19:42 Temp 25
VENT / / / / VENT
X 4584 Y 1816 Hdg Depth 2515 Alt O Marker(type/#)
Sample type 6 Dead Riftle
Basket location

	Assoc. water sa	ample #	_ Assoc.	rock sample #		(type)			
	Description of a	associated fauna	&/or type	of venting				-	
Sample	# Healthy x 4565 w			9-5 Bas Depth 2514				Nean (type/#)	Tedoly
				rock sample # _					
				of venting					
Sample									
	X Y			_ Depth					
		A Secretary Constitution		. rock sample # _					
	Description of a	associated fauna	&/or type	e of venting					
Sample									4
	X Y	Hdg		_ Depth	_ Alt	Marker _		_(type/#)	
		Sample type _							
				rock sample # _					
	Description of	associated fauna	a &/or type	e of venting					
Sample									-
	X Y	′ Hdg	1	_ Depth	_ Alt	Marker _		_(type/#)	
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				2 1990					
				c. rock sample # _					
	Description of	associated fauna	a &/or type	e of venting					-
Sampl	e #	Time	_ Temp _		,		_ Vent		_
	X \	/ Hdg		_ Depth	_ Alt	Marker _		_(type/#)	
		Sample type _	-						
				c. rock sample # _					
	Description of	associated fauna	a &/or typ	e of venting					-
Samp	e#	_ Time	_ Temp _				Vent		_
	v \	V Ца		Denth	Δlt	Marker		(type/#)	

		- Сантріо	type						
		Basket	ocation						¥.
	Assoc. water	er sample # _		Assoc	c. rock sample # _		(type)		
	Description	of associate	d fauna	&/or type	e of venting				
ROCK	SAMPLES								
Take	photos befo	ore collecti	on and	in the	claw. If needed	, make	sketches	w/ sca	les.
Sampl	e #	Time		Temp _				Vent	
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	Assoc. wate	r sample#_		_ Assoc	biol. sample #		_ (type)	. E	
Sample	Assoc. wate Descriptive	r sample # _ comments _		_ Assoc	biol. sample #		_ (type)	< 8	
Sample	Assoc. wate Descriptive	r sample # _ comments _ Time		_ Assoc	biol. sample #		_ (type)	Vent	(tyne/#)
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EXPERIMENT DEPLOYMENTS/RECOVERIES

Take photos before and after deployment or recovery. Make sketches with scales.
Loca Fed
Expt ID/# LVP Time 15:47 Temp Vent
7 1 1 1 1 1 1 1 1 1
Description of associated fauna &/or type of venting
Saw an octopus
Additional assoc. samples: type/ID
Additional descriptive comments
Additional descriptive comments Dop logged LV Puls 11-7
×4556 Y 18370 Hdg 334 Depth 2515 Alt 1.68 Marker (type/#)
Description of associated fauna &/or type of venting
Saw lots of crabs of 2 octopus mating
Additional assoc. samples: type/ID
Additional descriptive comments
Expt ID/# Rell 05-11 Time 20:39 Temp Vent Vent X 4 5 6 4 Y 18316 Hdg 16 8 Depth 2514 Alt O 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/IDAdditional 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 M		Marker type _		Marker	_ Marker #		
X	Y	Hdg	Depth	Alt	Marker	(type/#)	
Reason/	assoc. sar	mple(s)					
Time		Marker type _		Marker	#		
X	Y	Hdg	Depth	Alt	Marker	(type/#)	
Reason/	assoc. sar	mple(s)		2			
Commen	ts						
Time		Marker type		Markar	. #		
Х	Y	Hdg	Depth	Alt	Marker	(type/#)	
Reason/	assoc. sar	mple(s)					
Commen	ts						

ADDITIONAL NOTES: