DIVE PLAN – Leg 1 Dive 12 Deploy Wally 2

ROV Dive Number: OE 0115
Location: ***Barkley Canyon*** *Date: May 10, 2014 PDT*
Constraints: Weather, Sufficient deck space

Objectives
- Deploy Wally II (Device IDs: 22668, 22770)
- Connect Wally II
- Take 10 push cores - 2 at Waypoint #3 (48.31197, -126.06602) and 3 at Waypoint #12 (48.31197, -126.06588)
- Niskin O2 water sample

Dive Dependents
1. ROV porch grating orientation with respect to ROV heading
2. Wally 1 has been recovered
3. Wally 2 ready for deployment

Ship Procedure
1. Transit to site, assess weather and sea state. Proceed only when it is safe to do so
2. Deploy ROV USBL pole
3. Lower Wally 2 to seafloor (freefall deployment)

ACTION	LATITUDE	LONGITUDE	DEPTH (m)
Descend at Barkley Hydrates IP	48° 18.7266’	-126° 03.9480’	870
Ascend at Barkley Hydrates IP	48° 18.7266’	-126° 03.9480’	870

Shore Procedure
1. Monitor Twitter feed

Communications With Shore
1. On-board team will tweet using @oceanetworksops twitter account at the beginning of the dive
2. Post the dive plan on the cruise website
3. On-board team will use intercoms during operations as required

Navigation
1. Record positions of the deployed platforms and satellite instruments
2. Guide visual transect
3. Record interesting positions

Dive Chief
1. Record deviations from dive plan
2. Record change to site layout diagrams

Site/Equipment IDs

ACTION	SITEID	SITENAME	DEVICE ID	DEVICENAME	LATITUDE	LONGITUDE	DEPTH	PORT	EXT CABLE
Connect	100049	Hydrate_IP_2009-07	10002	BC Hydrate JB-07	48°18.7266'	-126°03.9480'	870		
Connect	100244	Hydrate_Wally-IP_2014-05	22668	Crawler IA 2(switch)	48°18.7046'	-126°03.9227'	860	J7	191/101.EX.0191
Connect	100244	Hydrate_Wally-IP_2014-05	22770	Crawler plus light 2	48°18.7046'	-126°03.9227'	860		
Connect	100244	Hydrate_Wally-IP_2014-05	22772	Tilt-Compensated Heading Module TCM 2.6 12604 on Crawler	48°18.7046'	-126°03.9227'	860		
Connect	100244	Hydrate_Wally-IP_2014-05	22787	Franatech METS Methane Sensor G051-E303 on Crawler	48°18.7046'	-126°03.9227'	860		
Connect	100244	Hydrate_Wally-IP_2014-05	11002	ADM CTD 105 on Crawler	48°18.7046'	-126°03.9227'	860		
Connect	100244	Hydrate_Wally-IP_2014-05	22665	Seapoint Turbidity Meter 12423 on Crawler	48°18.7046'	-126°03.9227'	860		
Connect	100244	Hydrate_Wally-IP_2014-05	22628	Hs Engineers Current Meter 2001 on Crawler	48°18.7046'	-126°03.9227'	860		
Connect	100244	Hydrate_Wally-IP_2014-05	22788	Pan/tilt/zoom Crawler Webcam 3	48°18.7046'	-126°03.9227'	860		
Connect	100244	Hydrate_Wally-IP_2014-05	23174	Allied Prosilica GC1290C 02-2186A-17670 Camera	48°18.7046'	-126°03.9227'	860		
Connect	100244	Hydrate_Wally-IP_2014-05	?	Rear Lights	48°18.7046'	-126°03.9227'	860		
Connect	100244	Hydrate_Wally-IP_2014-05	22664	Wet-Labs Fluorometer 3125 on Crawler	48°18.7046'	-126°03.9227'	860		
Reference		Landing Zone			48°18.7342'	-126°03.9732'			
Reference	100071	WW 18_2009			48°18.7047'	-126°03.9227'	860		

ROV/Equipment Requirements

1. Confirm Wally floats correct
2. Double carabineer for Wally strain relief on platform
3. Knife/cutter for strain relief
4. Milk Crate on front of ROV
5. 10 push-core tubes
6. Niskin bottle on ROV

ROV Procedure

On Deck
1. Connect Wally 2 to nav beacon and free fall deployment rigging (Ensure nav beacon turned on)
2. Confirm ship is above Wally landing Zone (same as 2013 Sonar tripod landing zone)
3. Deploy Wally 2 off STBD side with ship's crane

Descent
1. Start recording, start streaming video to UVic, start dive log, confirm both are being received
2. Descend ROV

Deploy Wally II
1. Confirm Wally is settled on seafloor
2. Disconnect drop weights from Wally
3. Move Wally to deployment location (Waypoint 30)
4. Remove pull pins holding cable tray to Wally 2
5. Remove Wally 2 from cable tray and place next to tray.
6. Remove pins holding cable to tray
7. Grab ODI connector and fly up and towards IP watching cable release, make sure the cable releases fully from the tray
8. Systems confirm port J7 on JB-07 (DeviceID: 10007) is off
9. Connect Wally 2 to JB-07, port J7
10. Attach kellum on cable to IP leg
11. Systems power on JB-07, port J7
12. Return to Wally
13. Attach carabineer on tray to Wally floats
14. Request permission to release floats from Bridge
15. Confirm ship is ready with RHIB in water to recover floats.
16. Release floats from Wally 2, with care to allow tray to pass Wally.
17. ROV to record Wally 2 position (video and 50 m range sonar scan showing Wally relative to IP)
18. Standby to monitor Wally 2 with ROV pilot directly communicating with Wally team in Germany via intercom connection to shore

Push Cores
1. Take 10 push cores
2. 5 push cores at Waypoint #3 (48.31197, -126.06602) avoiding any scars/disturbances left by the previous sampling in the Falkor cruise. Always avoid Wally tracks or any disturbance
3. 5 push cores at Waypoint #12 (48.31197, -126.06588) avoiding any scars/disturbances left by the previous sampling in the Falkor cruise. Always avoid Wally tracks or any disturbance

Take O2 sample
1. Return to IP.
2. Place bottle near to and at approximately the same height as the CTD
3. Trigger bottle

Pre-Ascent Checklist

1. Wally 2 position (video and 50 m range sonar scan showing Wally relative to IP)
2. Push cores
3. Niskin bottle

Ascend

1. Request permission for recovery from Bridge
2. Recover ROV, deployment tray

Post Dive Sample Handling

Niskin O2 water sample

Staff Scientist responsible: Fabio De Leo

Procedure for water sampling and *in situ* oxygen sample fixing

1) Collect water samples from desired depth with Niskin
2) On deck: fit silicon drawing tube with digital thermometer to spigot
3) Open the release valve (at the top end of the bottle) gently … do not open all the way quickly as this might introduce bubbles into the bottle
4) Open the spigot with the open end of the silcon drawing tubing and check for bubbles in the tube. Remove bubbles by gently squeezing tubing and/or adjusting flow rate of water
5) While water is running through the tubing, place the open end at the base of the glass O_2 flask
6) Allow the flask to overflow 3X the total volume of the flask. Take care not to introduce bubbles
7) During the time it takes for (6) note the temperature
8) Close the spigot only after the open end of the drawing tube has been pulled from the flask
9) Add each of two reagents: 1mL of a) $MnSO_4$; and b) $Na_2S_2O_3\,5H_2O$. These reagents will be in dispensing bottles and should be kept at hand while drawing water to the flasks.
10) Seal the flask with the glass stopper only AFTER reagents have been added.
11) The tip of the reagent dispensers should extend below the neck of the oxygen flasks, so that precipitate does not form in the excess seawater above the neck of the flasks
12) Once the stopper is in place; invert the flask in a vigorous fashion repeatedly for 1 minute
13) Make sure that the flask number and event are recorded. Place the fixed sample in the O2 flask case; add distilled water onto the top of the flask to prevent diffusion of air during storage; and store in the cold room

Keep the reagents at room temperature in the lab between sampling events