Summary

Cruise: AT41

Pilot: B. Strickrott Dive:A4960 Stbd Observer: D. Forsman

Date: 20 Aug. 2018 Site: Wilmington Canyon Port Observer: A. Demopoulos

Today's dive was at Wilmington Canyon. We planned to descend to a relatively flat area within a channel southwest of the head of the canyon and then traverse SE upslope along a steep feature on the canyon wall. This was a PIT dive for Danik Forsman. The basket contained 5 niskins, 10 quivers with 2 pre-cleaned quivers for Kellogg (Q1 and Q2), biobox with 3 containers (B1,2,3), 24 push cores, slurp with one chamber, rock box and scoop. The descent started at 1222UTC following all the usual checks and rechecks at the surface. The water column was full of dense particulate material that became more concentrated with depth. Swimmers (zooplankton/shrimp), ctenophores, jellies, salps, and siphonophores were observed throughout the dive, sometimes in high abundance. As we descended, the pilot noted there was no nav comms and top lab will have to navigate us to our waypoints. This was later resolved when nav sms was reset. At 1244UTC, we reached the seafloor at 682 m, and noted major turbidity in the water column, severely limiting visibility. The seafloor was composed of soft sediment, with high currents (~2kt from SW to NE) scouring the sediment surface. A ground was detected at 1252UTC while on bottom, and determined to be associated with the VB seawater pump motor. Once resolved, we took on weight to help with stability and maneuvering in the current. Framegrabber was not functioning during the dive because the teradecks were not functioning. It was determined that given the time used to trouble shoot the ground and visibility issues, we should transit toward waypoint 2 to try and get in the lee of the current and hopefully better visibility. At 1322 (685m), the pilot used the current to crab crawl to the southeast toward waypoint 2. Several fish (rattails, myctophids) were observed en route, along with zooplankton swimmers, marine snow, and other water column critters. The terrain, when visible, was lumpy and hummocky, draped with soft sediment. At 1431UTC (662m), we set down on bottom again, noted a Chaceon crab (red crab) with several lost limbs and plastic plate. Other trash noted was a beer can. The downlooking camera provided a great view of the scouring currents, pealing up sediment layers and creating sediment pebbles. At 1506UTC, there was a smooth bolder observed out the port side, with a "bathynectes"-type crab at the base. The boulder was very rounded. We also saw a flytrap anemone on the seafloor. Other

hard substrate features were detected in the scanning sonar, but due to the poor visibility, we couldn't approach them. For several minutes we tried to make our way east, with the hope to reach an area with better visibility. At about 30 mab, the visibility improved, but would decline again once we descended to the seafloor. Because the currents were pushing us toward the boulders and the location of fishing gear, plus the 0% visibility, at 1534 UTC (668m) it was determined that we should move as far west as possible to a position where we could recover safely. Once we reached about 688 m, we waited for the signal from top lab for permission to leave bottom. While we waited, we collected 1 push core and 5 niskins (688m), plus saw a shark out the pilot's view port. At 1609 UTC, we left bottom and started heading to the surface. POM and marine snow were visible throughout the water column during ascent, decreasing in concentration as we neared the surface. At 1648, the tow was attached and we returned to the ship.