

Description of Additional Supplementary Files

File name: Supplementary Data 1

Description: Chemical composition of the plumes during the CTD survey of the Segment of the Woodlark ridge

File name: Supplementary Data 2

Description: Petrological description of major types of sulfide deposits recovered at La Scala vent field

File name: Supplementary Data 3

Description: Geochemical composition of selected sulfide deposits (bulk samples and mineral assemblages) at La Scala vent field

File name: Supplementary Data 4

Description: List of identified taxa collected and observed on videos from La Scala vent field.

File name: Supplementary Data 5

Description: Species presence in *Vulcanolepas*, *Ifremeria* and *Alviniconcha* communities collected from La Scala vent field. Species abundance is represented by the following code: empty = absent; + = low abundance; ++ = medium abundance; +++ = high abundance. Species in brackets denote the dominant engineering species corresponding to each community.