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Supporting Information for

**Biogeochemical consequences of non-vertical methane transport in sediment offshore northwestern Svalbard**

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Figure S1

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Figure S1. Peeper site. (A) Overview of the site showing chemosynthetic communities before peepers and heatflow probe were deployed. (B) Relative positions between Peeper 1, 2, and the heatflow probe. (C) Peeper 1 and 2 in the bacterial mat. (D) Peeper 3 and 4 in the tubeworm field. (E) Peeper 5 and 6 at the gas vent. (F) Filamentous sulfur bacteria overgrowing tubeworms. (G) Gas release after removal of Peeper 5 at the gas vent (close-up of the area shown in E). Note that instruments were not deployed in the center of the chemosynthetic communities to avoid disturbances of the surface sediment with the submersible.

Movie S1. Video of the temporal development of temperature in the sediment of the peeper site (bacterial mat close to Peeper 1 and 2) recorded by the heatflow probe. Temperature sensors (Sensor 1-8) were positioned at a distance of 4.5 cm. Sensor 8 was close to the sediment-water interface. Sensor 1 was at the deepest sediment depth. The heatflow probe recorded temperatures between 23 August 2012 9:39 (start of the JAGO dive) and 02 September 2012 14:39 (about two hours before the probe was retrieved from the sediment). The probe was deployed inside the sediment at the peeper site between 23 August 2012 13:24 (deployed) and 02. September 2012 16:50 (retrieved). For more details see text. Note that the recording started before the probe was deployed in the sediment.