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Continuous one year record of methane flux from the Dashgil mud volcano/Azerbaijan

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Significant quantities of greenhouse gases are constantly emitted from natural sources. The methane emission from land-based mud volcanoes is considered as one of the major natural sources for methane discharge into the atmosphere. Previous estimates of gas flux from mud volcanoes are primarily based on spot measurements or measurements over a short time. We have put in place a monitoring station over a gas seep to initiate for the first time a long-time monitoring of the variations in gas discharge. The gas seep is located at the bottom of a small lake. The monitoring station rests on a fixed float over the gas seep. The rising gas is collected and forced past methane and radon sniffers. We measure methane flux and changes in gas composition. Gas flux is highly variable. Periods of nearly stable gas output interchange with phases of rapid gas flux variations. Occasionally, gas output stops almost completely for several days before resumption "of production" at previous levels. Despite all the gas flux irregularities, the monthly output of methane averages around 50 m^3 at this one site. We will present the complete record and will outline the characteristics of the various gas flux phases, so far encountered. Since October 2004 a second monitoring station on the distant Perikushkul mud volcano/Azerbaijan is in operation. His record will help us to identify possible common characteristics of gas discharge by mud volcanoes.