Mud volcanoes on the planet Earth
Review of monograph “Atlas of the world mud volcanoes”

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References
Not all volcanoes belch lava. Some erupt mud — lots of it. Most mud volcanoes just gurgle up bits of muck from time to time, but one is particularly known for frequent, powerful explosions. New research explains what powers these intense eruptions and just how strong they can get. University of Oslo mud volcanologist Adriano Mazzini and his colleagues studied Lokbatan, a mud volcano in Azerbaijan. Mazzini calls this small country just north of Iran “the kingdom of mud volcanoes.” It has hundreds, but Lokbatan is exceptional.

The volcano’s first recorded eruption occurred in 1829. Roughly every The mud volcanoes sampled all emitted methane gas consistently at 3% volume. The average pH for the mud volcanic soil was 7.98. The average Cation Exchange Capacity (CEC) was found to be 2.16 kg/mol, and the average Percentage Water Content was 34.5%.

Mud volcanism, or sedimentary volcanism, represents one of the most intriguing phenomena of the Earth’s crust, with important implications in energy resource exploration, seismicity, geo-hazard and atmospheric budget of greenhouse gases. Since the first review papers were issued at the beginning of 2000s, a large amount of new geological, geophysical and geochemical data has been acquired, which clarified ambiguous concepts and significantly improved our knowledge of mud volcanism. Underwater mud volcanoes are located at these active plate margins, containing a mix of liquids and gases that are forced up from below the Earth’s surface. The experts wanted to better understand how the subduction of oceanic plates may influence the microbial activity associated with the global methane cycle. The investigation was focused on a cluster of underwater volcanoes located near Japan. With the help of a Japanese drilling ship, the team recovered sediment from 200 meters deep in the bottom of the Pacific Ocean.

The study is published in the journal Science Advances. By Chrissy Sexton, Earth.com Staff Writer. Find more related articles. Environment Category. Planet Earth. Strange News. Animals. "These serpentine mud volcanoes would have been the best environment for sustaining life,” researcher Francis Albarede, a geochemist at the Ecole Normale Supérieure of Lyon in France, told LiveScience. “These findings mean that you could have sparked life at those places and also have it survive there.” In contrast, serpentine mud volcanoes are relatively lukewarm, and alkaline instead of acidic. Although these serpentine mud volcanoes are relatively uncommon now, they would have been more prevalent when the seas more thoroughly dominated the world. They seem to prefer to form at oceanic subduction zones that is, areas where oceanic plates dive under one another.