

**OCACS Environmental Group Monthly Presentation****Burning Earth: 750°C Temperatures in an Active Landslide****Thursday, February 23, 2012 at 7:30pm****Henry B. Kerfoot**

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**Presentation Abstract:**

Venting of steam and smoke was observed from undeveloped land adjacent to the active portion of a municipal solid waste disposal facility in the coastal foothills of Orange County. A study was performed to assess the sources of the heat responsible for generating the steam and smoke. A program of sampling and laboratory analysis was developed to evaluate potential sources including: (1) Combustion of landfill gas methane from the disposal area, (2) Combustion of natural gas methane, (3) Geothermal gas, (4) Oxidation of sulfide minerals associated with marine shales, and (5) Combustion of shale-associated hydrocarbons. Ambient air concentrations of hydrogen sulfide and visibly red-hot near-surface temperatures required special protective equipment during field activities. Near-surface air was sampled at three locations just above the smoke/steam vents and at two upwind locations and three soil-gas samples were taken using titanium tubes. Near-surface temperatures of over 750 degrees C were measured using an infrared temperature meter. The air above venting gas showed concentrations of hydrogen sulfide over 500 ppmv, thermogenic hydrocarbons consistent with hydrocarbon combustion or pyrolysis, and the soil-gas samples contained over 2000 ppmv hydrogen sulfide, carbon monoxide, and atmospheric levels of N<sub>2</sub>. The data and interpretation of them will be presented.

**Speaker Biography:**

Henry Kerfoot is an environmental chemist at Geosyntec Consultants in Huntington Beach, with over 25 years of experience in environmental chemistry. His work focuses on monitoring soil gas, groundwater and air for forensics, development of remedial actions, and troubleshooting of *in situ* groundwater treatment systems. He has a Master of Science in Chemistry from Florida State University and a B.A. in Chemistry from The Johns Hopkins University.

**Location:**

Kennedy/Jenks Consultants - Conference Hall  
2355 Main St., Suite 140  
Irvine, CA 92614

**Reservations:**

Limited to first 25 persons with reservations. E-mail reservations to Ganesh Rajagopalan at [RGanesh@KennedyJenks.com](mailto:RGanesh@KennedyJenks.com) by February 21<sup>st</sup>, 2012.