Geophysical Research Abstracts, Vol. 7, 05299, 2005
SRef-ID: 1607-7962/gra/EGU05-A-05299

Temporal Variability of High Temperature Vent Fluids at the TAG Hydrothermal Field, 26˚N, Mid Atlantic Ridge

D.R.H. Green (1), B.J. Alker (1), S. Bennett (1), C.M. Sands (1), C.R. German (1), C. Parker (2), K.L. Von Damm (2), S. Humphris (3), R. Reves-Sohn (3)

(1) Southampton Oceanography Centre, Southampton, SO14 3ZH, UK

(2) University of New Hampshire, Durham, NH 03824, USA

(3) Woods Hole Oceanographic Institution, MA 02543, USA

(drhg@soc.soton.ac.uk / Fax: +44 23 8059 6554 / Phone: +44 23 8059 6531)

A national facility for hydrothermal fluid and cold seep research was established in the UK in 2004 at the Southampton Oceanography Centre. This comprises a seagoing component of fluid sampling equipment, real-time in situ temperature sensors and analytical instruments, including an ion chromatograph, pH / electropotential meter and spectrophotometer, and laboratories in Southampton equipped with an ICP-OES and ICP-MS. Alkalinity, pH, [H_2S], [Br^-] and [SO_4^{2-}] may be determined onboard upon recovery of the samplers. Major and trace element compositions, chlorinity and concentrations of nutrients are determined in the laboratory post cruise. In October 2004, the group collected high-temperature vent fluids at TAG during R/V Knorr cruise Kn180-1 (co PIs: R. Reves-Sohn & S. Humphris). ROV *Jason II* provided the platform for sampling on this occasion, however other deep submergence vehicles such as ROV *Isis* will also be utilised in the future. This was the last of four legs to study seismicity and fluid flow at the TAG hydrothermal mound. Temperature probes and ocean bottom seismometers were deployed throughout a major period of the study and comparable vent fluid samples were collected at the start of the experiment in June / July 2003. Preliminary data will be presented and contrasted with those obtained on previous occasions. A potential advantage for this study is the opportunity to consider the data in the context of other time-series studies and to evaluate changes in the context of seismic activity and changes in fluid flow observed in the intervening

period between the two sets of sample acquisitions, 2003-2004.