Dataset: Chemical composition of diffuse flow vent fluids collected from the Crab Spa site at East Pacific Rise during the AT26-10 oceanographic expedition, Jan. 2014 (Microbial Communities at Deep-Sea Vents project)

Project(s): An Integrated Study of Energy Metabolism, Carbon Fixation, and Colonization Mechanisms in Chemosynthetic Microbial Communities at Deep-Sea Vents (Microbial Communities at Deep-Sea Vents)

Abstract: This dataset includes chemical composition (Cl, SO4, Na, K, Mg, and Ca concentrations) of diffuse flow vent fluids collected from the Crab Spa (9.8398º N, 104.2913º W) site at East Pacific Rise during the RV/Atlantic AT26-10 oceanographic expedition, Jan. 2014. Samples collected at 2500 m depth by using isobaric gas-tight samplers (IGT, WHOI). Upon transfer onboard the R/V Atlantis, the sampled diffuse flow fluids were incubated at 250 bars. Refer to the dataset https://www.bco-dmo.org/dataset/628993 for information regarding these incubations. For a complete list of measurements, refer to the supplemental document 'Field_names.pdf', and a full dataset description is included in the supplemental file 'Dataset_description.pdf'. The most current version of this dataset is available at: http://www.bco-dmo.org/dataset/529026

Description: Chemical composition of diffuse flow vent fluids collected from Crab Spa, 9N on the East Pacific Rise

This dataset includes chemical composition (Cl, SO4, Na, K, Mg, and Ca concentrations) of diffuse flow vent fluids collected from the Crab Spa (9.8398º N, 104.2913º W) site at East Pacific Rise during the RV/Atlantic AT26-10 oceanographic expedition, Jan. 2014.

Acquisition Description: These samples were collected with Isobaric-Gas-Tight samplers and processed onboard R/V Atlantis. The IGT samplers were deployed by Dr. Jeff Seewald from WHOI. Chemical analysis of the major cation/anion species was conducted at the Geophysical Lab, Carnegie Institution of Washington

Processing Description:

BCO-DMO Processing:

- added conventional header with dataset name, PI name, version date
- added lat, lon, date columns
- renamed parameters to BCO-DMO standard
- sorted by date
- reformated date from m/d/yyyy to yyyy-mm-dd

Deployment Information

Deployment description for R/V Atlantis AT26-10

Deployment description for R/V Atlantis AT26-10

Samples were collected by ROV Jason II at the 9N deep-sea hydrothermal vent field on the East Pacific Rise, Pacific Ocean

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Instrument Information

Instrument	Ion Chromatograph
Description	Metrohm/Dionex, for cation and anion species.
Generic Instrument Name	Ion Chromatograph
Generic Instrument Description	Ion chromatography is a form of liquid chromatography that measures concentrations of ionic species by separating them based on their interaction with a resin. Ionic species separate differently depending on species type and size. Ion chromatographs are able to measure concentrations of major anions, such as fluoride, chloride, nitrate, nitrite, and sulfate, as well as major cations such as lithium, sodium, ammonium, potassium, calcium, and magnesium in the parts-per-billion (ppb) range. (from http://serc.carleton.edu/microbelife/research_methods/biogeochemical/ic.html)

Instrument	IGT Sampler
Description	*local description not specified*
Generic Instrument Name	Isobaric Gas-Tight Sampler
Generic Instrument Description	Isobaric Gas Tight (IGT) samplers, designed and built by scientists and engineers at WHOI, are titanium instruments designed to be used with deep submergence vehicles to sample corrosive hydrothermal vent fluids at high temperature and high pressure. The IGT prevents the sampled fluid from degassing as pressure decreases during the vehicle's ascent to the surface.