



**National Oceanography
Centre, Southampton**

UNIVERSITY OF SOUTHAMPTON AND
NATURAL ENVIRONMENT RESEARCH COUNCIL

Initiative for International Cooperation in Ridge Crest Studies

**INTERRIDGE OFFICE,
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29 December 2010

Dear Adam,

Thank you for your informative presentation at the 2010 InterRidge Steering Committee Meeting. As we discussed, the InterRidge Office is now preparing information from our research community for the ISA's Legal and Technical Committee, as they prepare to consider the first licence application under the new Regulations governing the prospecting of polymetallic sulfides.

To enable InterRidge to provide relevant information, however, we would like to ask for further information please about some points in the Regulations, as follows:

- (1a) What are the Authority's specific plans for monitoring and evaluating potential impacts of exploration of polymetallic sulfides (i.e. the specifics of Regulation 5.1)?
- (1b) In particular, how will the Authority's monitoring and evaluation programmes ensure that they are informed by relevant scientific knowledge?
- (1c) Contractors are required to submit an impact assessment, and a proposal for environmental monitoring, but how will those be assessed by the Authority?

Contractors are also required to submit "*data that could be used to establish an environmental baseline against which to assess the effect of the proposed activities*".

- (1d) What is the explicit definition of the data required for that outcome (for example, will those data include measures of "biodiversity" such as species richness - and if so, estimated by what method? Or measures of population abundances? Or measures of genetic connectivity to neighbouring populations?), and overall how will the suitability of those data be assessed?

We recognise that "exploration" is defined to include studies of environmental factors that must be taken into account in "exploitation", but as exploration includes recovery of "*a reasonable quantity of minerals, being the quantity necessary for testing*" and "*the use and testing of recovery systems and equipment, processing facilities and transportation systems*", it may itself result in impacts to the marine environment and marine scientific research activities.

One of the premises of InterRidge is that the scientific community and industry have complementary roles to play in realising the economic and knowledge benefits of these seafloor resources. We note that data submitted in the reports of Contractors to the Authority will be kept confidential, other than data from environmental monitoring programmes.

- (2a) Following on from query (1) above, how will "data from environmental monitoring programmes" be defined, and by whom?

Some data collected by Contractors would be of benefit to the academic research community, such as bathymetry data, and data summarising the incidence of active hydrothermal systems. We note that Nautilus Minerals has shared such data with the research community from its sulfide prospecting activities outside the Area, which indicates that full confidentiality on all data is not necessarily required.

(2b) Will such data that are not commercially sensitive be made available to the international research community?

Given our incomplete knowledge of the ecology of hydrothermal vents and their global biogeography, Contractors undertaking prospecting activities may also make biological observations that are immensely important to the research community. Such observations, however, might not always be included in environmental monitoring programmes and their reporting.

(2c) Will there therefore be full guidelines for the submission or inclusion of biological data in reports to the Authority?

The Regulations state that *"Prospectors and the Secretary-General shall apply a precautionary approach, as reflected in principle 15 of the Rio Declaration. Prospecting shall not be undertaken if substantial evidence indicates the risk of serious harm to the marine environment."*

Our present scientific knowledge and understanding of the ecology of hydrothermal vents is limited. Consequently, demonstrating "substantial evidence" of "risk of serious harm" in specific cases may not be possible (for example, where species present at a site are new to science, with unknown population dynamics and life-history biology), although the general threat of such harm is clear (for a relevant review, please see Van Dover CL, Mining Seafloor Massive Sulfides and biodiversity: What is at risk? *ICES Journal of Marine Science*, **68**: 341-348, 2010).

But the precautionary approach expressed in Principle 15 of the Rio Declaration states that *"lack of full scientific certainty shall be not used as a reason for postponing cost-effective measures to prevent environmental degradation"*. In other words, a precautionary approach reverses the burden of proof: those taking the action need to demonstrate that it is *not* harmful, rather than "substantial evidence" of "risk of serious harm" being required to trigger protective measures.

(3a) How will a "precautionary approach" actually be implemented, given our incomplete knowledge of the biology of hydrothermal systems?

We look forward to further information on these points on behalf of the InterRidge community, so that we can provide the Legal and Technical Commission with relevant information for their proceedings.

Yours truly,



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Dr Bramley Murton
InterRidge Chair



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Dr Jon Copley
InterRidge Co-Chair