



Neptune and Company, Inc.

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30 September 2018

Secretariat
International Seabed Authority
14-20 Port Royal Street
Kingston, Jamaica
(submitted via email to consultation@isa.org.jm)

**RE: Draft Regulations on Exploitation of Mineral Resources of the Area
(ISBA/24/LTC/WP.1/Rev.1)**

Sir/Madam

Neptune and Company, Inc. (Neptune) has recently taken notice of the ongoing process by the International Seabed Authority to develop regulations for deep-sea mining and has decided to provide brief commentary for the most recent draft.

Neptune, a women-owned small business founded in 1992, is an environmental consulting company that has reviewed, commented on, and written regulatory guidance for several different agencies, including the Department of Energy (DOE), Environmental Protection Agency (EPA), the Nuclear Regulatory Commission (NRC), and State environmental agencies. The main focus of our participation in regulatory guidance development is to offer support and advice on how to improve the efficiency and effectiveness of the regulatory decision-making process through the connection between regulations and guidance and technical areas such as risk assessment, data science, stakeholder engagement and decision making. We have authored or co-authored most of EPA's quality system guidance, supported the DOE and the NRC in radionuclide disposal and remediation, and have written an entire system of technical guidance to support human health and environmental risk assessment for the Nevada Division of Environmental Protection. We have also co-authored guidance for the Inter-State Technology and Regulatory Council (ITRC), including development of brownfields, incremental sampling, and groundwater statistics.

Outside of US environmental regulatory agencies, Neptune also has provided regulatory and guidance support to international agencies such as the International Organization for Standardization (ISO) for whom Neptune provides a lead role for the US in the development and training in standardization of statistical practices internationally, and the International Atomic Energy Agency on issues associated with stakeholder engagement and decision analysis for radioactive decommissioning, remediation and disposal.

Neptune has also been asked to present at various National Academies of Sciences, Engineering and Medicine to address better decision making for environmental agencies in the US, and has supported efforts by the US Government Accountability Office on improving the effectiveness and efficiency of environmental regulations.

We have also provided training in analysis methods based on regulatory guidance in the areas of data quality objectives, statistics, risk assessment, quality assurance, data validation, environmental modeling, probabilistic modeling, decision analysis, and stakeholder engagement.

Please see below commentary for the most recent Exploitation regulations
ISBA/24/LTC/WP.1/Rev.1.

Sincerely,

A handwritten signature in black ink that reads "Kelly Black". The signature is written in a cursive, flowing style.

Kelly Black
President and Statistician
kblack@neptuneinc.org

NEPTUNE
AND COMPANY

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General Comments for Draft Regulations on Exploitation of Mineral Resources of the Area (ISBA/24/LTC/WP.1/Rev.1)

1. The term "data and information" is used repeatedly throughout the regulations, often in association with the Authority ultimately securing custody of such "data and information" for purposes deemed fit by the Authority. Notwithstanding intellectual property restrictions that flow from applicable licenses imposed on such "data and information" by the Authority, the Authority should also consider requiring contractors to include "code" as is "reasonably necessary for the Authority to discharge its duties and responsibilities under the Convention." "Code" can be generally defined to include computer code.

If indeed it is the intent of the Authority to retain the option of re-purposing the "data and information" acquired by Contractors for as yet unanticipated future applications, "data" – especially in situations where "raw data" is transformed into highly processed data – in and by itself may not be sufficient for such unanticipated future applications. Once past the contract's period of performance, the Authority may be limited in its options to obtain further information about how the data was transformed if the Authority had not required the "code" to be an integral part of the Contractor's deliverables.

The issue of whether "code" includes executable binary code, pseudo-code, or code that is ready to be compiled into executable binaries is beyond the scope of this discussion. Also, beyond the scope of this discussion is the type of license normally associated with code and its concomitant restrictions on distribution.

Itemized comments for Draft Regulations on Exploitation of Mineral Resources of the Area (ISBA/24/LTC/WP.1/Rev.1)

PART IV

PROTECTION AND PRESERVATION OF THE MARINE ENVIRONMENT

SECTION 1

Obligations Relating to the Marine Environment

Draft Regulation 46 General Obligations

1. Paragraph (d). Where it currently states “including timely access to relevant environmental information” should be “including timely access to relevant environmental data and information”.

Preparation of the Environmental Impact Statement

Draft Regulation 46 bis

Number 1

1. The “exploitation” regulations need to specifically connect the work completed in the “exploration” regulations to completion of an EIS for exploitation. *ISBA/19/LTC/8, Recommendations for the guidance of contractors for the assessment of the possible environmental impacts arising from exploration for marine minerals in the Area, Issued by the Legal and Technical Commission* details requirements for the collection of environmental baseline data with the following overall statement:

It is important to obtain sufficient information from the exploration area to document the natural conditions that exist prior to test mining, to gain insight into natural processes such as dispersion and settling of particles and benthic faunal succession, and to gather other data that may make it possible to acquire the capability necessary to make accurate environmental impact prediction. (Part III – Environmental baseline studies)

“Number 1” needs to specifically reference the baseline data collected as part of the exploration effort as a starting point for the exploitation EIS.

2. The second sentence in Number 1 and Number 3 refers to a prior “environmental risk assessment to determine the main issues and impacts”. What is the framework anticipated for the environmental risk assessment? Given the large reservoir of biodiversity in the deep ocean and the fact that the deep ocean is already experiencing stress from climate change, contamination and plastics (World Ocean Assessment, United Nations, 2016, http://www.un.org/Depts/los/global_reporting/WOA_RPROC/WOACompilation.pdf), a protocol for deep ocean environmental risk assessment is needed. This protocol can be regionally or benthos-specific given the information already provided in the World Ocean Assessment combined with environmental baseline data collected during “exploration” and several recent studies, including:

Weaver P.P.E., Billett D.S.M., Van Dover C.L. (2018) Environmental Risks of Deep-sea Mining. In: Salomon M., Markus T. (eds) Handbook on Marine Environment Protection. Springer, Cham (<https://doi.org/10.1007/978-3-319-60156-4>)

Thiel, H. "From MESEDA to DISCOL: A new approach to deep-sea mining risk assessments." Mar. Min. 10.4 (1991): 369-386.

**Draft Regulation 46 ter
Number 1**

1. The Environmental Management and Monitoring Plan will also need to be driven by the environmental baseline information and the “prior environmental risk assessment”. Explicitly linking these discrete information sources in these exploitation regulations, such as in this Environmental Management and Monitoring Plan, is fundamental to the success of these regulations in achieving adequate protection of the deep-sea environment.

SECTION 3

Compliance with Environmental Management and Monitoring Plans and performance assessments

Draft Regulation 49

Compliance with the Environmental Management and Monitoring Plan

1. (a) Monitor and report to whom?

**Draft Regulation 50
Number 8**

1. The LTC should address the question of at what point would a stop work order be issued?

PART IX

INFORMATION, GATHERING AND HANDLING

Draft Regulation 87

Number 3

1. “Confidential Information” should also not include any environmental data collected as part of baseline studies or the environmental risk assessment. While mineral resource data may be confidential, any other environmental data should be made public as soon as possible.

**Draft regulation 88
Number 1**

1. Paragraph (b). Where it currently states “The development and maintenance of a classification, log and inventory system of all written information received” should be “The development and maintenance of a classification, log and inventory system of all Confidential Information received”.

PART XI
INSPECTION, COMPLIANCE AND ENFORCEMENT
Draft Regulation 94
Number 3

1. Paragraph 6 of the draft regulation states “shall report acts of violence, intimidation, abuse against or the wilful obstruction of an Inspector”. There may also be situations where a member of the Contractor’s staff comes forward as a whistle-blower to the Inspector, in-situ (on the vessel) or ex-situ (prior to vessel boarding by the Inspector using forms of communication other than in-person written or verbal communications). The Authority may wish to consider measures to ensure that the Inspector has a protocol for such situations to minimize the chances of violence, intimidation, or abuse against such whistle-blowers.

Draft regulation 96
Number 4 and 5

1. Paragraph 4 addresses the situation seizure of artifacts by the Inspector. In situations where (1) evidence needs to be preserved that cannot be adequately documented by “video, audio, photograph or other form of recording” (paragraph 5) and (2) physical removal of said artifacts is not possible, the Authority may wish to authorize the Inspector to use other means such as securing those artifacts by tamper-resistant methods such as tamper-resistant seals to render such artifacts in a state that is preserved for future inspection.

Draft Regulation 97
Number 1

1. “Serious Harm to the Environment” needs more thorough definition beyond what is currently described in “Use of terms and scope.” The following reference provides information on this topic:

Levin, Lisa A. et.al, Defining “serious harm” to the marine environment in the context of deep-seabed mining Marine Policy 74 (2016) 245–259
(<https://scripps.ucsd.edu/centers/cmbc/wp-content/uploads/sites/39/2016/11/Marine-Policy-2016.pdf>)

FAO guidelines cited in this document listing the following six factors to consider are also useful:

- (1) intensity and severity of the impact;
- (2) spatial extent of the impact relative to habitat availability;
- (3) sensitivity and vulnerability of the ecosystem to the impact;
- (4) ability for the ecosystem to recover;
- (5) the extent of ecosystem alteration; and
- (6) the timing and duration of the impact relative to species and habitat needs

ANNEX IV
ENVIRONMENTAL IMPACT STATEMENT
Section 3.7 Other alternatives considered

1. For this EIS document heading, the draft regulations state “Provide an account of alternative options that were considered and rejected in favour of the current proposal. The criteria used to select from amongst the alternative options should also be included as part of the EIS.

Section 4 Description of the existing physicochemical environment

1. See comments for:
Preparation of the Environmental Impact Statement
Draft Regulation 46 bis
Number 1

Section 5 Description of the Existing Biological environment

1. See comments for:
Preparation of the Environmental Impact Statement
Draft Regulation 46 bis
Number 1

Section 11.2 Environmental management system

1. This term is ambiguous. Is this an “electronic data and information management system”? If so, clearer language would be beneficial.