



Milieueffectenverklaring van Global Sea Mineral Resources voor kleinschalige testen van componenten van knollencollectoren op de zeebodem

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Overzicht: Dit bericht is doorgestuurd.

1 Attachment



VLIZ_EIA_GSR_2018.xlsx

Geachte,

Gelieve in bijlage de opmerkingen en suggesties vanuit VLIZ te vinden op de openbare raadpleging 'Milieueffectenverklaring van Global Sea Mineral Resources voor kleinschalige testen van componenten van knollencollectoren op de zeebodem'.

Indien er vragen of onduidelijkheden zouden zijn, geven wij graag bijkomende toelichting.

Graag bevestiging als de input goed ontvangen werd.

Met vriendelijke groeten,
Hans

dr. Hans Pirlet

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Section	Page(s)	Type of remarks	Part of text (if relevant)	Adaptation or remark
				It is recognised that the collaboration with JPI-OII MiningImpact 2 project provides a significant added value for the planned small-scale test. However, as GSR is closely linked to this consortium, it would add to the transparency to elaborate on the measures that are being taken to preserve the independence and integrity of the involved scientific partners within this project. What kind of agreements were made between both parties in this regard? Also, clear stipulations about the data policy would be appreciated: Will (part of) the acquired data of this test be shared with the wider scientific community (and under what conditions).
1.3		20 general remark		In general, it should be clear who is fulfilling the concerned activity (GSR or JPI Oceans-consortium) and which activities correspond to legal obligations.
1.4		22 clarification		In this part of the text the time period for testing is 4 to 5 days, while in the executive summary it says: maximal 4 days. Please clarify.
3.2		25 suggestion		Please also indicate the station-location on the map in Figure 3.
3.4.2.1.1	42-43	remark	The in-situ penetration depth into the seabed, i.e., the depth of influence, is difficult to predict.	Will this uncertainty be taken on board in the elaboration of the monitoring programme? How will one measure the depth of influence in the seabed? This will be an important parameter to assess the environmental impact (as it also affects the size of the sediment plume). It would be good to have a table with an overview of the different campaigns that were undertaken by GSR (with their purpose). In this way one get a good insight in the state of play.
3.6.2		52 general remark clarification		Will one also make use of the long-term moorings that were deployed in 2017? Given the meso-scale of these eddies, the question at hand is if the monitoring strategy will be adapted to sufficiently measure the wider spatial dispersal of the sediment plume on longer time scales (not only in the vicinity of the impact site). In line with the precautionary approach, it will be of key importance to first have a good understanding of this process (also to validate dispersal models) before moving on to larger-scale activities.
4.1.3.2		69 remark	Those eddies can also elicit deep sea eddies (at the seafloor) that might influence sediment dynamics (proven in BGR area not in the GSR area). The observed differences in water column nutrients between the two GSR expeditions may be the result of inter-annual and/or seasonal variability. However, seasonal variability in the region is said to be weak (Amos and Roels, 1977; Pennington et al., 2006). Furthermore, GSRNOD15A was undertaken during an El Niño phase (SOI ranging between -1.6 and -1.7), and GSRNOD17 took place during a weak La Niña – El Niño phase (Southern Oscillation Index (SOI) for May 2017: +0.3, June 2017: -0.4). An El Niño phase is generally associated with reduced nutrient levels (Pennington et al., 2006), which may explain the reduced nitrate concentrations measured in the GSRNOD15A samples. Also the Pacific Decadal Oscillation, a source of multi-decadal variability, was shown to affect nutrient concentrations in the Pacific Ocean (Yasunaka et al., 2016).	The inferred influence of processes which span several years (and even decades) underlines the importance of long-term environmental time series. The current 'two-year moorings' in the context of JPI-Oceans provide a good basis but may not cover a long enough time period to sufficiently measure the driving processes. Please elaborate how this will be taken on in the monitoring programme.
4.1.4		88 remark	The nodule-free and nodule-bearing sites sampled at site B4S03 (Figure 64) were characterized by similar sedimentary characteristics, and similar meio- and macrofauna communities. The only statistically significant difference was observed in terms of meiofaunal standing stock, which was elevated in nodule-free sediments. A potential explanation for this divergence is the possibly higher sedimentation rate at the nodule-free site (as observed in the BGR license area, Mewes et al. (2014)) and/or the expected higher epifaunal densities in nodule bearing sites competing for food, or predated on endobenthic organisms. Within the station B4S03, average total macrofaunal abundances were higher in the GSRNOD15A samples when compared to the GSRNOD17 samples.	The formulation that was used in this paragraph seems like an understatement compared to findings in articles such as Vanreusel et al. 2016 (scientific reports) where evidence was found that that epifaunal densities are more than two times higher at dense nodule coverage, and that taxa such as alcyonacean and antipatharian corals are virtually absent from nodule-free areas. Moreover, surveys conducted along tracks from trawling or experimental mining simulations up to 37 years old, suggest that the removal of epifauna is almost complete and that its full recovery is slow.
4.2.1		115 remark	No noticeable difference could be noted between slope areas and slope+flat areas.	Indeed, the abundances were higher but not significantly different.
4.2.2.3.3		119 remark	To remain as transparent as possible, and to ensure independent scientific data results, this research will be performed by the independent JPI-O MiningImpact 2 Consortium.	One should add that only one sample was collected. Hence, replication is needed to tell something about the effect of slope.
4.2.2.4.2		125 remark		I want to echo one of the remarks above to clearly list the measures/agreements that will be taken to preserve the integrity and independence of the scientists. It should be clear that this is a collaboration between equal parties and not contract research.
5.		130 remark	At the moment, the amount of sediment deposition from a mining-induced plume that could either be tolerable or lethal for any of the faunal groups of the deep sea is unknown. Deployment of the AUV (autonomous deep multibeam system) a few tens of meters to a few meters above the seafloor has the advantage that it has no potential impacts on mammals, as these are not found at the abyssal depths of the contract area.	This demonstrates the importance to define underpinned boundaries which prevent large-scale environmental impact. Will the monitoring-aspect of this small-scale test also look into defining these kind of thresholds? Please note that for larger scale activities the temporal aspect should also be taken into account (stress caused due to plume formation over a longer period of time in a given area)
5.1.3.2		131 remark		
5.2.2		148 remark	The early stage of the EMMP lies in the design of the PPV itself, in order to minimize and mitigate as much as possible the impact on the seafloor.	There is a recent paper from NOC (Marsh et al. 2018) which reports that mammals occurs in these areas.
7.2		167 clarification		It would be good to add an overview table linking the design measures to the relevant impact(s). In this way, it will be much clearer to what extent environmental mitigation has played a role in the design.
7.3.1		195 remark	A project data policy will be generated to specify time schedules from data creation to internal project availability and final publication (time periods will be adjusted according to the scientific disciplines) in PANGAEA as well as general data use agreements.	There is a lot of information about where the data of the JPI-Oceans consortium will be stored but will it be in line with the FAIR-principles (findable, accessible, interoperable and reusable)? The EIA should be clear on that but I guess that the data policy still needs to be developed? Also, what about the (environmental) data that will be gathered by GSR? Please clarify.
7.3.1.4		197 remark	dissemination	I suspect that the dissemination-activities completely frame within the JPI-Oceans project? Again, it should be clear who is fulfilling the concerned activity (GSR or JPI Oceans-consortium) and which activities correspond to legal obligations of GSR.