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10 May 2024

Dear Environmental Assessment Practitioner,

COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE PROPOSED AFRICA OIL SA CORP BLOCK 3B/4B OFFSHORE EXPLORATION
EIMS REF: 1570

PASA/DMRE REF: 12/3/339

INTRODUCTION

1. These submissions are made by Natural Justice and The Green Connection in response to the updated Draft Environmental Impact Assessment Report (RDEIAR) published for comment by Environmental Impact Management Services (Pty) Ltd for the proposed exploration and environmental authorisation applications for Block 3B/4B, on 28 March 2024. These submissions are also supported by Masifundise Development Trust. See attached a copy of a letter of support from Masifundise marked **annex M1**,

2. Natural Justice and The Green Connection submitted comments on the Draft Scoping Report on 21 August 2023 and on the Draft Environmental Impact Assessment Report (DEIAR) of December 2023. In the comment on the Draft Scoping Report, we set out our objection to the exploitation of oil and gas resources. We stand by those comments.

3. In this document, we deal with the revisions to the EIA Report. Insofar as the contents of this document do not specifically change our previous comments, our previous comments stand.

COMMENTS ON THE DRAFT BASIC ASSESSMENT REPORT

I.THE REVISED DEIAR'S ASSESSMENT OF OIL SPILL IMPACTS REMAINS FLAWED

4. Despite updating the DEIAR's oil spill models to include the potential risk of a large-scale crude oil spill, the Revised DEIAR (RDEIAR) still contains several major flaws that result in the underestimation of the environmental risks that would occur from an unplanned spill. Specifically, the RDEIAR still fails to model releases from the worst-case scenario locations, fails to adopt a capping time for well blowouts that reflects the worst-case scenario, erroneously concludes that coastal/shoreline ecosystems will not be impacted, relies on inaccurate water quality assumptions, and fails to consider the effects of upwelling on oil dispersion. As a result, the RDEIAR does not accurately assess the environmental risks associated with the proposed exploratory drilling project, in contravention of NEMA's requirements. All analyses throughout the DEIAR that relies on the results of this flawed modelling is similarly flawed, including the potential negative economic and social harm resulting from a spill.

The RDEIAR's Oil Spill Models Failed to Model Releases from Worst Case Scenario Locations

5. In order to understand the true scope of impacts and risks that could result from a proposed project, NEMA requires an EIA to consider and assess the expected environmental impacts under the worst possible scenarios.[1] The RDEIAR's revised oil spill model claims to model the worst-case scenario release locations for an unplanned oil spill, however it fails to do so in two ways. First, the DEIAR models well locations that do not represent the worst-case locations within the Area of Interest (AoI) and secondly, the AoI itself is ambiguous. As a result, the RDEIAR likely underestimates or ignores many of the environmental impacts that could result from unplanned events.

The Modelled Well Locations Do Not Represent the Worst-Case Scenario

6. The RDEIAR's oil spill assessment modelled a worst-case scenario release point based on previously-identified well locations, but not based on the total area where exploratory drilling could occur. The RDEIAR's oil spill assessment modelled spills from two release points that were selected out of five identified well locations. The authors' response to

[1] NEMA requires an environmental impact assessment to assess "each identified potentially significant impact and risk, including the probability of the impact and risk occurring." A probability is the extent to which an event is likely to occur. Because a worst-case scenario has some probability of occurring, the DEIAR must assess the impacts of a worst-case scenario. For the proposed project, a worst-case scenario includes a blowout event that results in the release of hydrocarbons into the surrounding environment. NEMA Regulations, Appendix 1, Section 3(1)(j)(iv). *See also* NEMA EIA Regulations, Appendix 3(1)(2) (Stating that an environmental impact assessment report must set out "[t]he environmental impacts, mitigation and closure outcomes as well as the residual risks of the proposed activity.").

comments states that one of these points, Point D, "represents the closest *of the identified well locations* to the Benguela Muds MPA."[2] They imply that it was not necessary to model any other release points because "the applicant currently has no intention to drill any exploratory wells in the areas identified by the blue points."[3]

7. However, it is not clear that the applicant is bound by their current intentions and the identified well locations, or even that exact locations have been identified. If the applicant is allowed to drill anywhere in the Area of Interest (AoI), then the modelled release points do not represent the worst-case scenario locations. In fact, a number of passages in the RDEIAR confirm that well locations within the AOI have not been finalized, and will not be finalized until after the project is authorized. Specifically, the Oil Spill Modelling Report states that "**The exact locations of the wells to be drilled within the area of interest in Block 3B-4B are not yet known**," and the points identified are merely "indicative target points".[4] Further, the RDEIAR describes how "[t]he selection of the specific well locations **will be based on a number of factors**, including further detailed analysis of the 3D seismic data and pre-drilling survey interpretation and the geological target. A Remote Operating Vehicle (ROV) or other remote sensing equipment will typically be used to **finalise the well position** based on inter alia the presence of any seafloor obstacles or the presence of any sensitive features that may become evident."[5] Even the number of wells that could be drilled remains uncertain; the RDEIAR notes that "the exploration for oil and gas within the Block 3B/4B offshore area will be undertaken by the drilling of exploration wells focused **mostly** on north and central of the exploration area. The sites which have been identified as AOI are located in the north where **three (3) to four (4) exploration wells are currently proposed** and at the central area where **one (1) to two (2) wells are currently proposed**".[6] This passage contemplates the drilling of up to six (6) exploration wells, but elsewhere, the RDEIAR claims that the number of wells would be limited to five (5).[7]

8. The RDEIAR even depends on the fact that well positions are not finalized as a mitigation measure for benthic impacts. The RDEIAR states that: "If sensitive and potentially vulnerable habitats are detected, [the operators should] **adjust the well position accordingly** to beyond 1,000 m or implement appropriate technologies, operational procedures and monitoring surveys to reduce the risks of, and assess the damage to, vulnerable seabed habitats and communities."[8]

9. These excerpts imply that drilling could occur anywhere within the AOI, and that exact locations have not been determined and are subject to change. Therefore, rather than choosing release locations from the five "indicative target points", the oil spill model

[2] EIMS, Response to Comments on the Draft Environmental Impact Assessment Report for the Proposed Africa Oil SA Corp Block 3B/4B Offshore Exploration (Apr. 3, 2024) [hereinafter "Response to Comments"] at p. 10-12.
[3] *Id*.
[4] Oil Spill Drift Modelling Condensate and Crude Oil Technical Report V07 (Apr. 5, 2024) [hereinafter "Oil Spill Modelling Report"] at p. 10.
[5] RDEIAR at p. xxxii [emphasis added].
[6] RDEIAR at p. xliii [emphasis added].
[7] *See* RDEIAR at p. 24 ("The Applicant is proposing to drill up to five exploration wells within an Area of Interest (AOI) within Block 3B/4B."); *Id.* at p. 508 ("The impact identifies that the proposed exploration activity could drill 5 wells in the designated areas of interest of the project over a 20-month period").
[8] RDEIAR at p. 354 [emphasis added].

should have picked worst case locations within the entire AoI. In our previous comment on the DEIAR, we provided the two worst case scenario example well locations within the AoI.[9]

The Well Locations and Delineation of the AoI are Unclear

10. Further, the locations of the "indicative target points" are ambiguous and the AoI boundaries vary in the documents. This makes it difficult to understand impacts to protected areas and sensitive habitats.

11. The non-technical summary and revised EIA do not include any figures or tables showing potential well locations. For instance, Figure 1 in Appendices 4.9 and 4.10 shows non-exact "indicative target points" for well locations, but the AoI and biodiversity areas shown in that figure differ from those in the body of the EIA, calling the reliability of the figure into question.

12. Additionally, Appendices 4.90 and 4.10 state that the two modelled release points (A and D) were selected based partly on the "[p]roximity of marine protected areas (MPAs) and critical biodiversity areas (CBAs) that might be impacted … (see Figure 1)". Since Figure 1 in both appendices depicts an AoI and biodiversity areas that differ from those used in the main body of the EIA, it is possible that these points do not reflect the worst case locations with respect to CBAs (See Figure A).

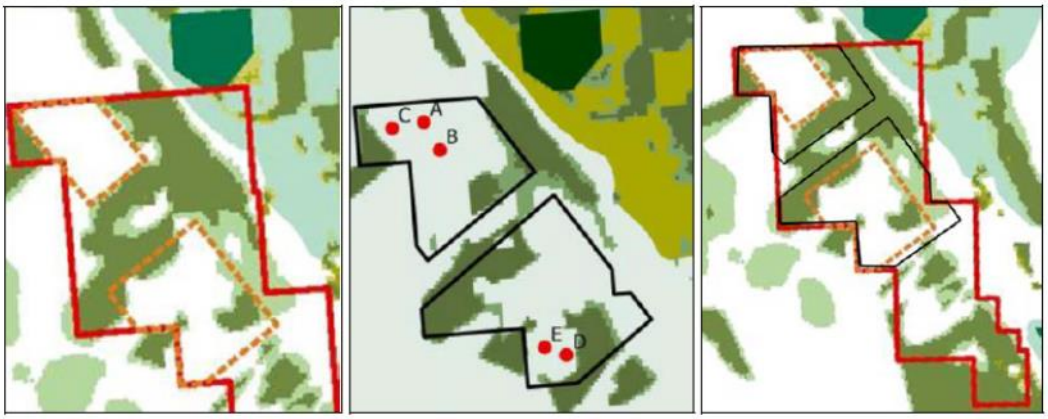

Figure A. The figure on the left shows AoIs as shown in the main EIAR document (Figure 4). The middle figure shows AoIs and "indicative target points" as shown in Appendices 4.9 (Oil Spill Modelling Report) (Figure 1) and 4.10 (Drill Cutting Modelling Report (Figure 1). The figure on the right shows the AoIs from Appendices 4.9 and 4.10 (black) overlaid on Figure 4 from the main body of the EIA.

13. Because of this discrepancy in the extent of the AoIs and the proximity of the "indicative target points" to nearby protected areas, it is impossible to ascertain whether the oil spill models truly reflect the worst-case scenario. At the very least, the authors of the RDEIAR should clarify the extent of the AoIs, the proximity of indicated well-locations to protected

[9] Natural Justice, The Green Connection, and Masifundise Development Trust, Comments on the Draft Environmental Impact Assessment Report for the Proposed Africa Oil SA Corp Block 3B/4B Offshore Exploration (8 February 2023) at p. 3-4.

areas, and whether there is any possibility that wells could be drilled elsewhere within the AoI. If it is true that the operator maintains the discretion to drill anywhere within the AoI if an Environmental Authorisation is granted, then the models must be revised to include the release points that would be closest to vulnerable marine habitats, and thus reflective of the worst case scenario.

The Capping Time Adopted by the RDEIAR's Oil Spill Models Fails to Reflect a Worst Case Scenario

14. The revised oil spill models use the same 20 day capping time as the previous version of the model. As we stated in our previous comments on the DEIAR, this capping time is based on multiple optimistic assumptions and therefore does not reflect a worst case scenario.

15. The RDEIAR bases the capping time on "the Oil Spill Contingency Plan (OSCP) prepared for exploration drilling campaign in Block 11B/12B".[10] However, that plan's estimate of 20 days depends upon conditions included in a note: "Provided no debris clearance requirement and suitable weather conditions"[11] and by its own admission fails to reflect a worst case scenario. Whether debris is present and weather conditions are "suitable" are factors beyond the operators' control, and therefore, the RDEIAR cannot assume that a 20 day capping time is guaranteed or even likely. Instead, the RDEIAR should have modeled the capping time under the worst conditions that can reasonably be expected; including the presence of debris that requires clearance and the worst possible weather conditions.

16. The revised oil spill models also does not consider a scenario in which the capping stack fails. A capping stack failure is not an impossibility. There is only one capping stack stored at Saldanha Bay, and a recent paper on risk analysis of subsea capping stacks points out that "[i]nstalling a capping stack on a blowing well is a technically complex exercise".[12] Capping stacks can fail for numerous reasons, and should not be assumed to have a 100% success rate.[13] If the capping stack at Saldanha Bay fails or happens to be in use at one of the growing number of nearby wells, then another capping stack would need to be brought in from another, more distant, location (such as Brazil). This would add a significant amount of time to the successful capping of the well.

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[10] Oil Spill Modelling Report at p. 21; *See also* Response to Comments at p. 7.

[11] Oil Spill Contingency Plan: TotalEnergies EP South Africa Oil Spill Response Strategy – Block 11B/12B (Aug. 2023), available at: https://www.wsp.com/-/media/service/south-africa/2023-documents/oil-spill-contingency-plan/teepsa_block11b12b_oscp.pdf.

[12] Jingyu Zhu et al., *Emergency Risk Analysis of Subsea Capping Stack in Blowout Scenario Integrating Numberical Simulation with ANN Model*, 296 Ocean Eng'g 116727 (2024), available at: https://www.sciencedirect.com/science/article/abs/pii/S0029801824000647.

[13] Valentin Vandenbussche et al., *Effect of Well Capping as a Blowout Risk Reduction Measure*, 2014 International Oil Spill Conference Paper (2014), available at: https://www.researchgate.net/publication/269850921_Effect_of_Well_Capping_as_a_Blowout_Risk_Reduction_Measure; IOGP et al., Subsea Capping Stack Design and Operability Assessment, Report no. 595 (Feb. 2020), available at: https://visual360.no/osrl/files/595.pdf.

The Oil Spill Model Questionably Concludes that Coastal Ecosystems will Not be Impacted

17. The oil spill report states in multiple locations that the model runs show no coastal/shoreline impacts. This conclusion forms the basis of many of the RDEIAR's findings on impacts to marine biodiversity.[14] However, this conclusion is not supported by the model results presented in the RDEIAR.

18. For example, in Figure 19, the figures for Quarters 2 and 3 show some surface presence probability (up to 20%) along the shore between Elands Bay and Strandfontein.[15] Similarly, Figure 20 shows some points with surface arrival times of 20.1-60 days along the coast in that same area.[16] Figure 21 shows emulsion thicknesses in even the middle category of 5.1-50 uM along the coast between St. Helena Bay and Hondeklip Bay.[17]

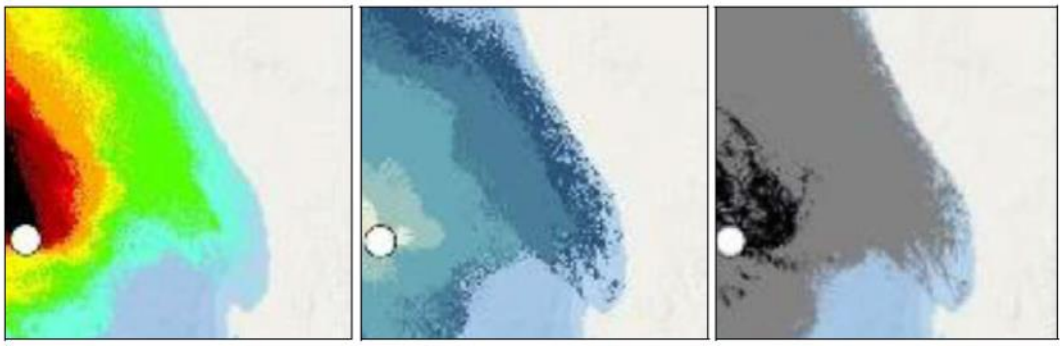

Figure B. Portions of Figures 19, 20, and 21 for Q2 showing results for the coastal area north of Saldanha Bay.

19. The likelihood of coastal impacts is supported by excerpts elsewhere in the RDEIAR. For example, the Report states that "attention should be paid to Quarters 2 and 3 for release Point D and for Quarter 2 for release Point A in that if the oil on surface is not recovered 60 days after the start of the spill, some remaining oil on surface could reach the South African coastline".[18]

20. Further, coastal ecosystems are particularly sensitive to oil spill impacts. The authors of the RDEIAR should present clearer model results showing that there is zero likelihood that

[14] 14 *See, e.g.,* RDEIAR at p. 386 ("Although the AOI is located in the marine environment, more than 180 km offshore, far removed from coastal MPAs and any sensitive coastal receptors (e.g. key faunal breeding/feeding areas, bird or seal colonies and nursery areas for commercial fish stocks), a large spill could still directly affect sensitive coastal receptors further north in Namibia"); *Id.* at p. 387 ("The worst-case stochastic scenario modelled was for a release duration of 20 days before capping with no surface response. The oil was predicted to not reach the shore, regardless of the season. Sensitive nearshore and coastal receptors were thus not considered in the assessment. This, however, makes the crucial assumption that the released liquid hydrocarbon is ONLY condensate with no crude oil being present."); *Id.* at p. 398 ("For Release Point D, and assuming that the oil on the surface is recovered within 60 days of the start of the spill, the stochastic modelling results indicate that no oil reaches the shore for probabilities >10%.... For Release Point A, the stochastic modelling results indicate that even for the capping only response to a blowout at the Release Points modelled, there is no probability of shoreline oiling").

[15] Oil Spill Modelling Report at p. 46.

[16] *Id.* at p. 48.

[17] *Id.* at p. 49.

[18] Oil Spill Modelling Report at p. 3.

oil will reach coastal habitats. Otherwise, the RDEIAR must be revised to consider oil spill impacts to coastal biodiversity.

The Oil Spill Models Rely on Inaccurate Water Quality Assumptions

21. The RDEIAR's models make assumptions about the impacts of crude oil on water quality that conflict with the best available science.

22. The RDEIAR Oil Spill Model Report assumes that crude oil releases will not impact the water column, stating: "For the Crude oil release: as the dispersion and dissolution during the rise of the oil is very low compared to Condensate, the impact of the crude oil release is not significant for the water column, and has to be focused on the surface, and all the processes involved after (natural dispersion, biodegradation, evaporation)."[19]

23. This assumption is not accurate. Some of the modelled response scenarios included using dispersants at the release point (SSDI), which would increase water column impacts (more oil and dispersants) while decreasing surface oil presence. Dispersants are designed to disperse the oil into the water column, which can decrease visible slicks on the surface, but increases the toxicity of oil within the water column because it is more easily taken up by organisms.[20] Additionally, the dispersants themselves can be toxic to marine organisms.[21]

24. Therefore, the RDEIAR's assessment of oil spill impacts to marine biodiversity should be revised to include the toxic effects of crude oil in the water column and the use of dispersants, along with the surface impacts.

The Oil Spill Models Contain Flaws that Undermine the Accuracy of their Results

25. Despite the revisions to the RDEIAR, the oil spill models contain several flaws in their underlying assumptions and methods that impact the accuracy of their overall results. Danielle Reich, a Principal Consultant with Shoals Edge Consulting with considerable experience in oil spill modelling, reviewed the Oil Spill Modelling Report. Reich concluded that she did not have confidence in the crude oil modelling results and that there is more potential for shoreline impact than the results are showing. Reich based this conclusion upon the first three issues listed below.

The Stochastic Models do not Accurately Portray the Risk of Shoreline Oiling

26. The Oil Spill Modelling Report's stochastic models conducted too few runs and adopted too large of a probability threshold, which portrays a lower risk of nearshore impacts than what is actually possible.

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[19] *Id.*

[20] Antonietta Quigg et al., *Marine Phytoplankton Responses to Oil and Dispersant Exposures: Knowledge Gained Since the Deepwater Horizon Oil Spill*, 164 Marine Pollution Bull. 112074 (2021), available at: https://www.sciencedirect.com/science/article/pii/S0025326X21001089#s0070.

[21] *Id*.

27. For the stochastic modelling, only 30 runs were conducted for each season. According to Reich, this is typically not enough runs to achieve statistical significance in the results, especially given that the models relied on a relatively short record (3 years) of wind and currents data. Since the crude oil spill model results show some probability of oil reaching the shore, more simulations are needed to fully capture the potential environmental variability.

28. The RDEIAR's mapping of surface oil probabilities also binned the data to only display probability values greater than 3.3%. It is unclear why 3.3% was selected. Showing probability values greater than 1% would more accurately show areas where even a slight probability of oiling is possible.

The Deterministic Models Yielded Unexpected, and Possibly Erroneous, Results

30. The RDEIAR's deterministic models may have relied on incorrect inputs and too great of a degradation rate, leading to results that are inconsistent with expected oil spill behavior.

31. Danielle Reich made the following observations about the Oil Spill Modeling Report's deterministic modeling:

32. "The mass balance graphs presented in Figures 23 and 36 concern me. The time series of surface oiling are very strange, and in my opinion are a red flag that something isn't quite right with the inputs. There are sudden resurfacings of huge amounts of oil, followed by much of the mass being immediately re-entrained into the water column. Figure 36, panel Q3 also has a strange artifact in the time series of surface oiling – a slow, linear decrease over several days, followed by a precipitous drop. The report is very lacking in details of the various model inputs, so it's difficult to say what might be the cause. It seems that the entrainment is overly sensitive to changing wind speeds, which might indicate a problem with the wind data. ... It's impossible to tell without more information from the modelers. If there is a problem with the deterministic results, then the stochastic results are suspect as well."

33. Additionally, it appears from the mass balance graphs that the Oil Spill Modelling Report adopted an extremely high biodegradation rate for crude oil (25% of the total mass of oil released). According to Reich, usually only a small fraction of oil is lost to decay (and only a small fraction of the total oil is even available for biodegradation). Before finalizing the EIAR, we encourage the authors to explain their choice of this degradation rate and provide additional justification for why it is appropriate for the region.

The Oil Spill Modelling Report did not Conduct Any Near-Field Modelling

34. Reich found that the lack of near-field modelling is a significant limitation to the study, since it provides important data for initializing the modeling of more distant oil spill impacts.

35. Reich notes that the near-field characteristics of blowouts typically occur within a few hundred meters of the wellhead. Near-field modelling defines the location and size of the plume, including the depths at which buoyancy takes over and oil droplets begin to rise on their own (rather than being propelled outward/upward). Near-field modelling also provides the oil droplet size distribution associated with the release, which determines how fast oil will rise to the surface (and how far submerged droplets may be transported by subsurface currents before surfacing). If the droplet sizes are very small, oil can take longer (several days to weeks) to reach the surface, and hence can be transported far from the release site before surfacing. This has significant implications for marine biodiversity, since species are impacted by oil in the water column in different ways than they are surface oil. The droplet size distribution is an important consideration for response planning as well, because entrained droplets are extremely difficult to detect and track in real-time, complicating response efforts. Depending on the subsurface currents and droplet size distribution, Reich explains that oil could end up in different places than the report predicted.

36. Reich observed that the modeling system relied on by the report is capable of conducting near-field modeling. Since near-field modeling is so important to understanding oil spill impacts, it would be appropriate to revise the oil spill report once again to include these models. At a minimum, the authors should justify why near-field modeling was not conducted and include the parameters assumed for initializing the far-field modeling. This would include the plume radius, trapping height, and initial droplet size distribution.

The Oil Spill Models Fail to Consider the Effects of Upwelling on Oil Dispersion

37. Lastly, it appears that the oil spill model did not take upwelling into account. During periods of upwelling, oil could be pulled towards the shore while still deep below the surface. The Oil Spill Model Report does not mention the term “upwelling,” and it does not appear in the discussions of oil spill impacts in the EIA.

38. The model mentions using 3D Metocean current data, but it is not clear if upwelling is accurately reflected in that data. Metocean data tends to only include meteorological and oceanographic conditions at the surface, and may not accurately reflect deeper currents (including upwelling). The coarse resolution of this data may also make it difficult to ascertain spill trajectories with the certainty required to understand impacts on coastal ecosystems and nearby protected areas.

39. Therefore, the RDEIAR’s authors should confirm that upwelling was incorporated into the Oil Spill Report’s models, or revise the models to incorporate the effects of coastal upwelling.

40. In conclusion, the RDEIAR assessment of oil spill impacts fails to model releases from the worst case scenario locations, failed to adopt a capping time for well blowouts that reflects the worst case scenario, erroneously concludes that coastal/shoreline ecosystems will not be impacted, relies on inaccurate water quality assumptions, and contains several technical issues. These major flaws result in the underestimation of the possible

environmental impacts of the proposed project. Therefore, they must be resolved before an Environmental Authorisation for the project can be granted.

II. THE DEIAR DOES NOT INCLUDE RESPONSE PLANS FOR COMMENT

41. Our previous submissions stand.

III. THE DEIAR'S ANALYSIS OF CUMULATIVE IMPACTS IS FLAWED AND RDEIAR UNDERESTIMATES THE PROPOSED PROJECT'S CUMULATIVE IMPACTS

42. As no changes were made in relation to the cumulative marine impacts, we reassert our arguments submitted in the response to the DEIAR.

43. In addition, The RDEIAR fails to fully consider the proposed project's cumulative impacts: specifically, how the proposed project would add to existing stressors from current and proposed offshore activities.

44. The map below shows current oil exploration and active petroleum production activities. These activities cover the majority of South Africa's waters, with over 300 wells already drilled.

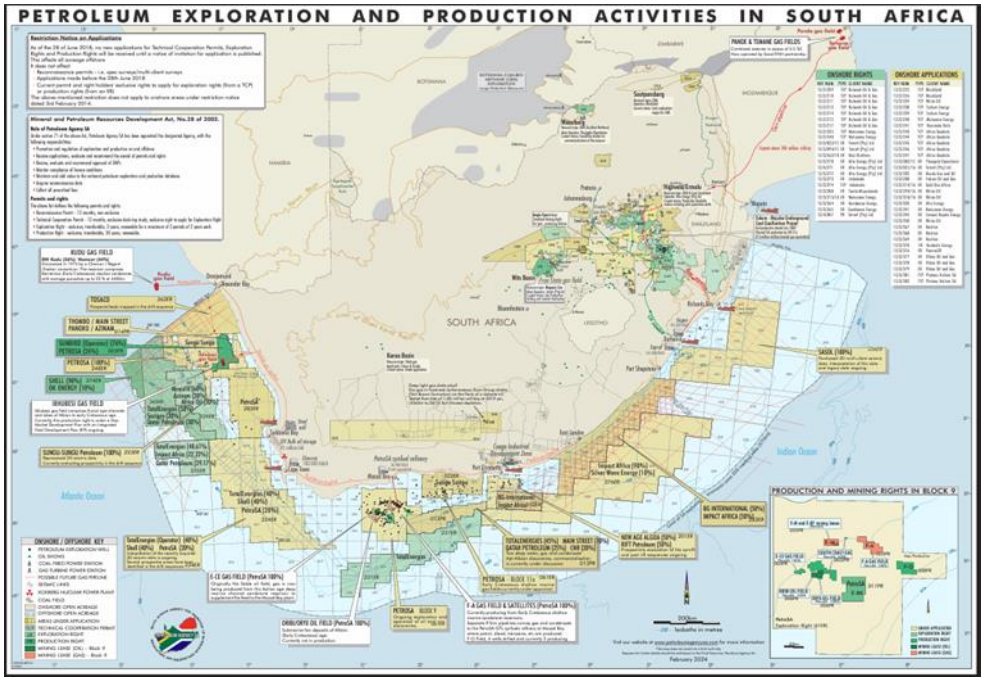

Figure B. Map of petroleum exploration and production activities in South Africa from Petroleum Agency SA.[22]

45. Cumulatively, these activities pose a significant pressure on South Africa's marine biodiversity. In fact, the 2018 National Biodiversity Assessment conducted an analysis of cumulative anthropogenic impacts, and found that a significant portion of the western South African coast and shelf edge is already experiencing high levels of cumulative

[22] Available at: https://www.petroleumagencysa.com/index.php/maps.

pressures and impacts (See Figure C). The study notes that: "areas of high cumulative pressures translate into areas of severe ecosystem degradation and poor ecosystem condition, particularly in the inner shelf and shelf edge…"[23]

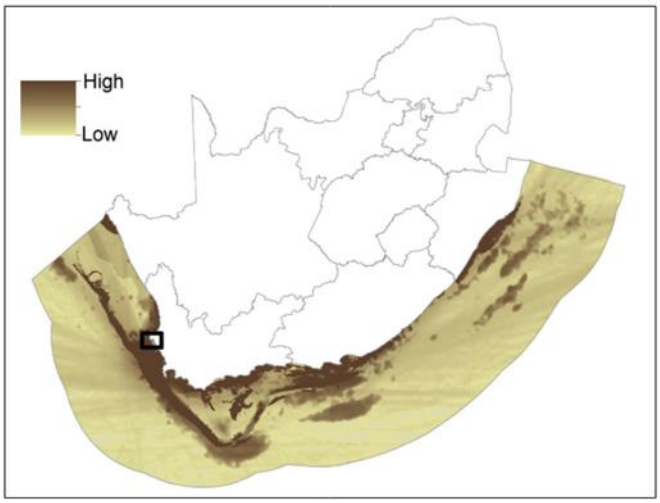

Figure C. Map of cumulative anthropogenic pressure from 2018 National Biodiversity Assessment Report

46. The RDEIAR notes, based on this map, that "3B/4B is located in an area experiencing very low cumulative impacts from other users and that the ecological condition is therefore mostly still natural or near-natural."[24] But, its cumulative effects analysis is focused on the footprint of the proposed project. What is missing is an evaluation of how increased anthropogenic impacts in one of the few remaining areas of South African waters that is considered to be in a "near-natural" condition could influence the total amount of habitat available to marine biodiversity in the offshore environment. The continued loss of "natural" environments is especially concerning, given the possibility of several concurrent or future activities in the vicinity of 3B/4B.[25]

IV. THE DEIAR LACKS SUFFICIENT BASELINE DATA TO EVALUATE ENVIRONMENTAL IMPACTS

47. As no changes were made in relation to this baseline data, we reassert our arguments submitted in the response to the DEIAR.

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[23] Sink KJ, Holness S, Skowno AL, Franken M, Majiedt PA, Atkinson LJ, Bernard A, Dunga LV, Harris LR, Kirkman SP, Oosthuizen A, Porter S, Smit K, Shannon L. 2019. Chapter 7: Ecosystem Threat Status. In: Sink KJ, van der Bank MG, Majiedt PA, Harris LR, Atkinson LJ, Kirkman SP, Karenyi N (eds). 2019. South African National Biodiversity Assessment 2018 Technical Report Volume 4: Marine Realm. South African National Biodiversity Institute, Pretoria. South Africa. http://hdl.handle.net/20.500.12143/6372

[24] RDEIAR at p. 463.

[25] *See* RDEIAR at p. 464 (noting proposed exploratory drilling in the Deep Water Orange Basin block and potential 3D Seismic surveying by Searcher. The RDEIAR notes that the latter "is anticipated to have been completed by the time this project receives a decision," but this is no longer true due to delays in Searcher's EIA process.)

V. THE REVISED DEIAR ANALYSIS OF MARINE IMPACTS AND FISHERIES IS INADEQUATE AND INACCURATE

48. Few changes were made to the RDEIAR's assessment of marine impacts. Accordingly, we incorporate our previous comments on the DEIAR,. We raise the following additional concerns.

The RDEIAR ignores the potential impacts of an oil spill on coastal and nearshore ecosystems.

49. Despite finding that there was a likelihood that crude oil from an unplanned well blowout could reach the shore, the RDEIAR fails to analyze impacts to coastal and shoreline biodiversity. As a result, the RDEIAR significantly underestimates environmental impacts associated with unplanned events.

50. The RDEIAR's updated oil spill models (Appendix 4.9) provides a visual of the potential area and probabilities of an oil spill following a blow out of a well at Block 3B/4B. The report states that oil from a blowout would not reach the shoreline based on any of the oil spill scenarios included in the modeling analysis, but (as discussed above), this statement is misleading. While the model results may not show oil particles touching the shoreline, the results provided do show probabilities nearing 20% that oil could come into nearshore environments, close enough to impact coastal habitats such as rocky subtidal areas, coral reefs, or kelp forests.

51. It is difficult to ascertain exactly which coastal ecosystems could be impacted, because the DEIAR fails to specify where sensitive nearshore ecosystems are located. The EIA describes the coastal ecosystems that are found in the project area on pages 150-161, but does not include a map to illustrate the distribution of these ecosystems along the shoreline. Therefore, it is difficult to determine which types of habitats would be closest to the spill area.

52. Evidence from other sources supports that several sensitive coastal habit types, including coral reefs, could be impacted by an oil spill from the proposed project. For example, Figure 18 in the 2018 National Biodiversity Assessment depicts the locations of several species that are indicative of vulnerable marine ecosystems, such as coral reefs.[26] Additionally, Figure 19 from the same report shows ecosystem types located in the area near the proposed project site. Some of these coastal ecosystems are noted in the RDEIAR as being Endangered (e.g. Cape Island, Cape Sheltered Rocky Shore) or Vulnerable (e.g.,

[26] 26 Sink KJ, Harris LR, Skowno AL, Livingstone T, Franken M, Porter S, Atkinson LJ, Bernard A, Cawthra H, Currie J, Dayaram A, de Wet W, Dunga LV, Filander Z, Green A, Herbert D, Karenyi N, Palmer R, Pfaff M, Makwela M,
Mackay F, van Niekerk L, van Zyl W, Bessinger M, Holness S, Kirkman SP, Lamberth S, Lück-Vogel M. 2019. Chapter 3: Marine Ecosystem Classification and Mapping. In: Sink KJ, van der Bank MG, Majiedt PA, Harris LR, Atkinson LJ, Kirkman SP, Karenyi N (eds). 2019. South African National Biodiversity Assessment 2018 Technical Report Volume 4: Marine Realm. South African National Biodiversity Institute, Pretoria. South Africa. http://hdl.handle.net/20.500.12143/6372

St. Helena Bay, Namaqua and Cape Kelp Forest).[27] Based on the modeled area of a potential oil spill, these and several other sensitive offshore ecosystems could be impacted, including Childs Bank Coral and Childs Bank Plateau.

53. The RDEIAR's assessment of marine impacts should be corrected to recognize that nearshore impacts are possible, to identify the sensitive nearshore and offshore ecosystems that could be affected by an unplanned oil spill, and to describe how crude oil could impact these habitats and the species that depend on them.

The RDEIAR does not adequately describe the potential impacts of oil spills to local marine biodiversity.

54. The RDEIAR's assessment of oil spill impacts on marine biodiversity underestimates the risks of an unplanned event by grouping very different types of marine fauna together and not fully considering the toxic effects of dispersant use.

55. The Southern Benguela is South Africa's most productive ecoregion[28] due to the influence of the cold, equatorward-flowing Benguela Current and the large-scale intensive upwelling of nutrient rich water.[29] The RDEIAR recognizes how upwelling supports a highly productive pelagic community in the vicinity of the proposed project, stating: "During upwelling the comparatively nutrient-poor surface waters are displaced by enriched deep water, supporting substantial seasonal primary phytoplankton production. This, in turn, serves as the basis for a rich food chain up through zooplankton, pelagic baitfish (anchovy, pilchard, round-herring and others), to predatory fish (hake and snoek) mammals (primarily seals and dolphins) and seabirds (jackass penguins, cormorants, pelicans, terns and others)."[30]

56. The RDEIAR provides many maps showing the distributions of fishes, birds, and mammals that overlap with the area of the modeled oil spill scenarios. The examples below were taken from Chapter 8.3 of the EIA, and illustrate the diversity of species (many of which are listed by the IUCN as Endangered, Threatened, or Vulnerable) that could be impacted by an oil spill and/or the use of dispersants. The red polygon in each figure corresponds to Block 3B/4B.

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[27] RDEIAR at p. 152-153.

[28] Sink KJ, Harris LR, Skowno AL, Livingstone T, Franken M, Porter S, Atkinson LJ, Bernard A, Cawthra H, Currie J, Dayaram A, de Wet W, Dunga LV, Filander Z, Green A, Herbert D, Karenyi N, Palmer R, Pfaff M, Makwela M, Mackay F, van Niekerk L, van Zyl W, Bessinger M, Holness S, Kirkman SP, Lamberth S, Lück-Vogel M. 2019. Chapter 3: Marine Ecosystem Classification and Mapping. In: Sink KJ, van der Bank MG, Majiedt PA, Harris LR, Atkinson LJ, Kirkman SP, Karenyi N (eds). 2019. South African National Biodiversity Assessment 2018 Technical Report Volume 4: Marine Realm. South African National Biodiversity Institute, Pretoria. South Africa. http://hdl.handle.net/20.500.12143/6372

[29] Shannon, L. V., *The Benguela ecosystem I: evolution of the Benguela, physical features and Processes*, 23 Oceanogr. Mar. Biol. Ann. Rev. 105-182 (1985).

[30] RDEIAR at p. 92.

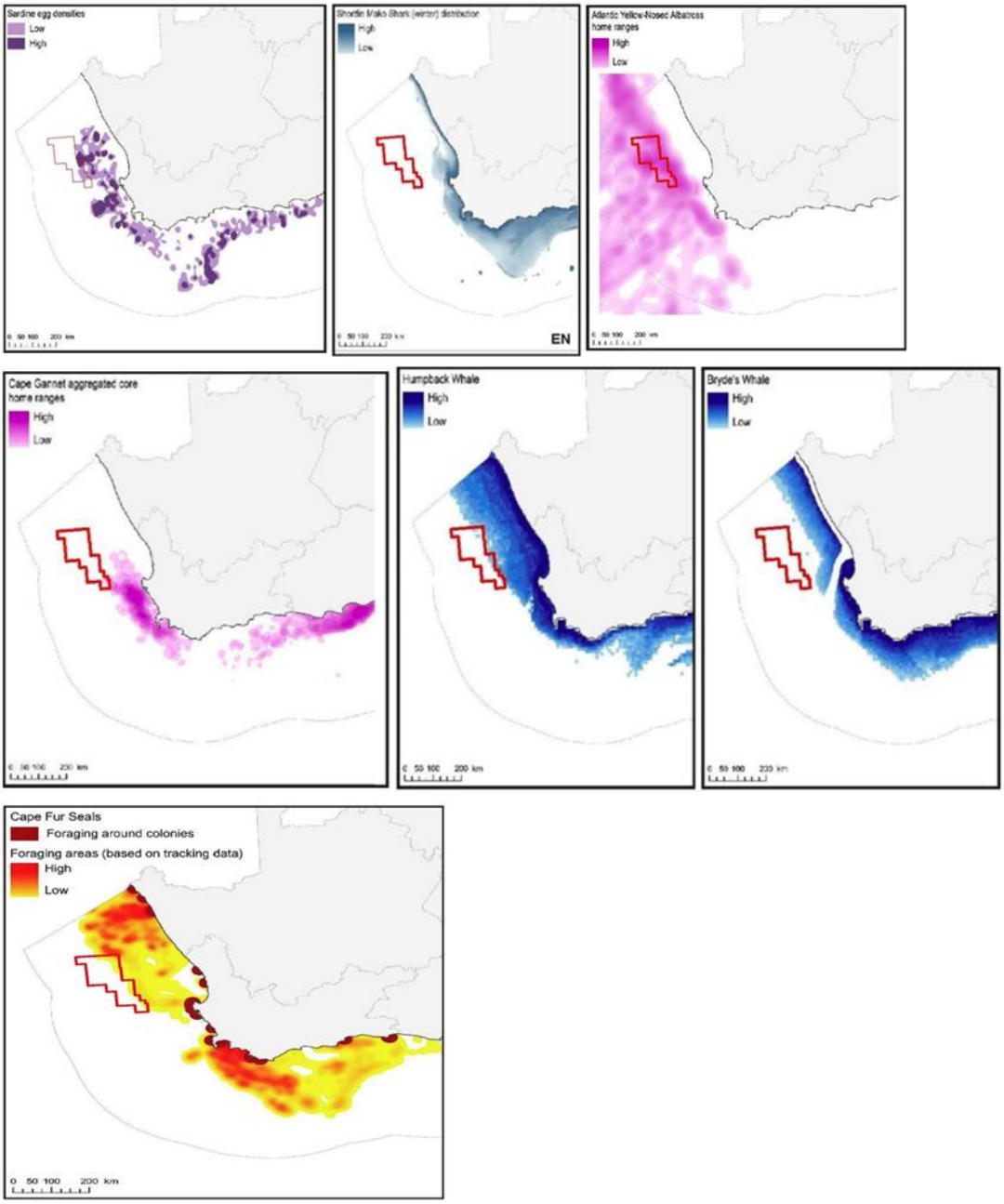

Figure A: Figures 54, 59, 63, 67, and 74 from the RDEIAR, depicting sardine egg densities; Shortfin Mako shark distribution (Regionally Vulnerable, Globally Endangered); Yellow-nosed Albatross habitat (Endangered), Cape Gannet habitat (Endangered); Humpback whale distribution (Regionally Vulnerable); Byrde's whale distribution (Regionally Vulnerable); and Cape Fur Seal foraging areas (Threatened).

57. The species listed above are impacted by oil in unique ways. Oil exposure is known to be lethal to plankton communities, fish (including eggs dispersing in the water column), birds, and marine mammals. The use of dispersants can further increase the toxicity of oil and/or result in sublethal effects, including bioaccumulation of polycyclic aromatic hydrocarbons (PAHs) in marine food webs.[31] The RDEIAR provides several pages describing the different

[31] [Cited in the RDEIAR] Almeda, R., Wambaugh, Z., Wang, Z., Hyatt, C., Liu, Z., & Buskey, E. J. (2013). Interactions between zooplankton and crude oil: toxic effects and bioaccumulation of polycyclic aromatic hydrocarbons. PloS one, 8(6), e67212.

ways in which oil and dispersants have been shown to negatively impact individual groups of marine fauna (i.e, plankton, benthic biota, sandy shores, rocky shores, fish, seabirds, turtles, seals, cetaceans).[32] In these narrative pages, the RDEIAR identifies risks of varying significance for different types of species. For example, the RDEIAR describes potentially severe impacts on plankton,[33] more moderate impacts on benthic species,[34] long-term impacts on sandy shore environments,[35] and the potential for extremely high impacts on seabirds,[36] sea turtles,[37] and seals.[38]

58. However, the RDEIAR used a matrix to assess impacts that combines all of these species groups together.[39] This has the effect of averaging impacts across all marine fauna and habitats. By doing so, potentially extreme impacts on some species groups (seabirds, turtles, seals, etc.), are masked by predicted lower and short-term impacts to other groups (benthic species, rocky coastal ecosystems, etc.). The true impacts of the proposed project would be better understood by the public and decision-makers if the RDEIAR expanded its assessment matrix to consider the potential impact significance for each faunal group and habitat separately, and for each oil spill scenario (condensate and crude).

59. Furthermore, the RDEIAR noted that oil spill impacts would be reduced from "HIGH" to "MEDIUM" significance compared to the previous iteration of the DEAIR where the same mitigation measures, save for one - the addition of the development of an Oiled Wildlife Contingency Plan – would not change the significance of a condensate spill from "MEDIUM". Further, the proposed mitigation includes the "[u]se of low toxicity dispersants that rapidly dilute to concentrations below most acute toxicity thresholds."[40] However, while dispersants alone can have low toxicity, the larger concern is the combination of oil and dispersants. In combination with crude oil, dispersants can increase the overall toxicity and absorption of oil by organisms. The RDEIAR acknowledges this, stating:

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[32] *See* RDEIAR at p. 390-394.

[33] RDEIAR at p. 390 ("Should the spill coincide with a major spawning peak in the kingklip, squid, hake, anchovy and pilchard spawning areas during spring and summer, it could result in severe mortalities and consequently a reduction in recruitment").

[34] RDEIAR at p. 391 ("In Block 3B/4B, the fauna inhabiting unconsolidated sediments is expected to be relatively ubiquitous, usually comprising fast-growing species able to rapidly recruit into disturbed areas.")

[35] RDEIAR at p. 392 ("From the comprehensive review of Bejarano and Michel (2016) it becomes evident that oil spilled on beaches results in significant declines in abundance, biomass and diversity of meiofaunal and macrofaunal communities, with recovery of macrofaunal communities typically occurring at between 2-5 years but with recovery of burrowing and long-lived species potentially taking up to 10 years on heavily oiled beaches.").

[36] RDEIAR at p. 393 ("Oil spills can thus affect shorebirds through direct acute mortality, as well as indirectly or long term by sub-lethal effects on bird health and behaviour. Habitat degradation of distant feeding or breeding areas may affect bird populations in ways that carry over to subsequent seasons.")

[37] RDEIAR at p. 393 ("Any turtle deaths from oil exposure would remove them from the breeding population. For species considered 'endangered' or 'critically endangered' such a loss can be significant.)

[38] RDEIAR at p. 394 ("Population-level impacts are also likely if spilled oil reaches the haul-out sites and rookeries where these seals rest or annually mass to breed. An ill-timed large spill in the vicinity of a fur seal breeding colony would thus likely be devastating.")

[39] *See* RDEIAR at p. 402.

[40] RDEIAR at p. 403.

60. “many of the ecological impacts reported for the DWH [Deepwater Horizon] spill were the result of the application of dispersants, both at the leaking well head and at the sea surface. Dispersants applied to the DWH spill modified the spreading, dispersal, weathering, biodegradation, and toxicity of the spilled oil, and their use is now thought to have negatively influenced the total environmental impact of the DWH spill as some of the components proved to be considerably more persistent than originally thought.”[41]

61. Given the toxic effects associated with dispersant use, the RDEIAR should elaborate on why dispersants were selected as a mitigation measure, as well as how they would contribute to impacts being reduced to “MEDIUM” significance when the evidence indicates that they could actually serve to aggravate impacts.

The RDEIAR creates challenges to understanding the data it depends upon

It is challenging to verify the scientific integrity of the fisheries data reported for some critical commercial species in the RDEIAR

62. For example, the EIA reports that offshore bottom (demersal) dominates contributions to wholesale value of the South African commercial fishing sector, and Table 24 (from page 169 of the EIA document) reports that hake are the only species caught by that sector (both deep and shallow water species of *Merluccius*). Thus, the life history and ecological characteristics of relevant hake species are of particular interest with respect to their potential vulnerability with respect to offshore hydrocarbon exploration. However, it is difficult to assess the relative risks or potential impacts of the project on hake species because the information provided is insufficiently detailed and not properly cited. For example, Figure 82 (from p. 171 of the EIA document, see below) depicts presumed spawning and fishing banks for hake; however, it does not clarify which species of hake the data represent nor which fishing grounds or if those grounds are an exhaustive depiction of all grounds or only some examples of where fishing is known to occur. Furthermore, the figure is used twice—once in the main EIA report (Fig. 82 on page 171) and once in Appendix 4.6 (as Fig 22 on page 52) but credited to two different sources, making it particularly difficult to understand what information is being shown or how robust it might be.

[41] RDEIAR at p. 390.

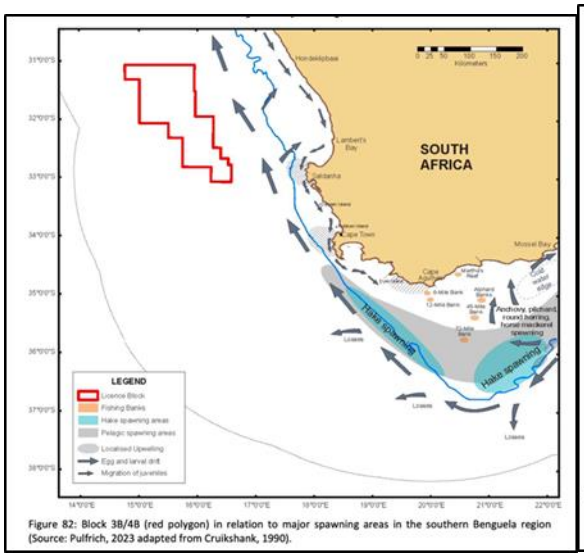

Figure 82: Block 3B/4B (red polygon) in relation to major spawning areas in the southern Benguela region (Source: Pulfrich, 2023 adapted from Cruikshank, 1990).

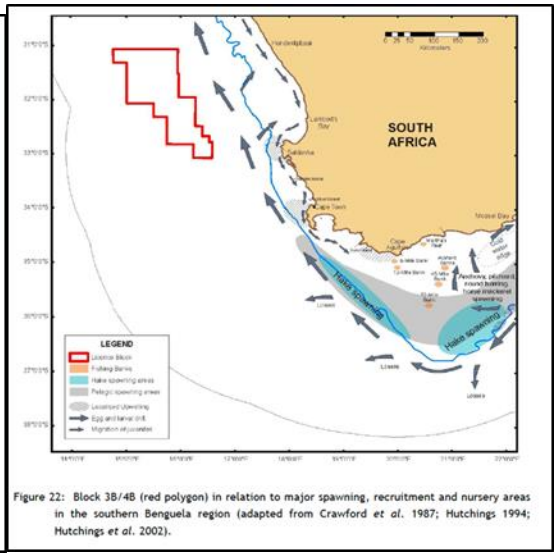

Figure 22: Block 3B/4B (red polygon) in relation to major spawning, recruitment and nursery areas in the southern Benguela region (adapted from Crawford *et al.* 1987; Hutchings 1994; Hutchings *et al.* 2002).

63. When the image is shown in the main body of the EIA report (image on the left), it credits the source as "Pulfrich, 2023 adapted from Cruikshank, 1990" while Appendix 4.6 credits the source as "adapted from Crawford *et al.* 1987; Hutchings 1994; Hutchings *et al.* 2002". Thus, it is impossible to verify the scientific soundness of the figure nor the associated designation of hake spawning grounds. It's entirely unclear when/where/how the data regarding hake spawning or fishing was collected.

Data presentation obscures the potential impact of an oil spill on offshore fisheries.

64. The way that data are presented in the EIA report make it challenging to understand the magnitude of the risks that a potential well blowout poses to fisheries. For example, in Figure 208 on page 422 of the revised EIA report document, data from a modeled well blowout was overlaid on top of fisheries catch data, but the blowout data layer is insufficiently transparent to make out both data sets simultaneously. The depiction of the likely dispersion from a blowout entirely obscures the fisheries data, and thus the reader cannot see how high the catch is within that same cell of the map. We can only see that there are high catch areas nearby, but not the co-located data as the map should show. If the top data layer were to be set to ~ 50% transparency, for example, the reader should be able to clearly make out both the colors of the blowout prediction model as well as the level of intensity of the catch data below.

VI. THE DEIAR'S MARINE ECOLOGY REPORT MISAPPLIES ITS STATED METHODS FOR ASSESSING THE SIGNIFICANCE OF IMPACTS BY ONLY CONSIDERING THE DURATION OF PROJECT ACTIVITIES, RATHER THAN THEIR IMPACTS ON THE ENVIRONMENT.

65. As no changes were made to our comments relating to significance assessments methods, we reassert our arguments submitted in the response to the DEIAR.

VII. THE DEIAR FAILS TO ABIDE BY THE PRECAUTIONARY PRINCIPLE IN ASSESSING THE SIGNIFICANCE OF IMPACTS CHARACTERIZED BY HIGH LEVELS OF UNCERTAINTY

66. As no changes were made in relation to our comments relating to the precautionary principle, we reassert our arguments submitted in the response to the DEIAR.

VIII. THE DEIAR WRONGLY CONCLUDES THAT AN UNPLANNED OIL SPILL WILL RESULT IN ECONOMIC BENEFITS FOR SOUTH AFRICA

67. No significant changes have been made on this section of the DEIAR and thus our previous comment stand. It is however worth putting emphasis on the fact that framing disasters or damage to the environment as a catalyst for economic benefits is outrageous.

IX. THE CLIMATE IMPACTS OF THE PROJECT ARE NOT ADEQUATELY ASSESSED

68. The RDEIAR and updated climate change impact assessment (CCIA) continue to assess only scope 1 emissions of the project, dismissing our comments on the DEIAR that the CCIA should have assessed a full life cycle assessment of the impacts that would result not only from the exploration process, but also from the exploitation and downstream combustion of hydrocarbons that would be produced should the project move forward to the next phase. In response, the EAP stated:

> "Scope 3 emissions and emissions associated with the potential future extraction and exploitation of the resource will not be considered further in the EIA Phase, as the project only relates to exploration activities, and it would not be possible to accurately determine size of the resource at this stage. Once exploration is complete and a resource has been defined, the Scope 3 emissions could be considered during a potential future production right application."[42]

69. As no changes were made in relation to our comments relating to a full life cycle assessment, including from production, we reassert our objections submitted in response to the DEIAR. We highlight that our interpretation of the law is supported by the judgment of the full bench of the Makhanda High Court in the Shell Wild Coast seismic survey case.[43] The Court set aside the respondents' argument, like that made here, that climate change impacts of production during the exploration phase are premature because they would be considered when an application for a production right would be submitted. The court pointed out that on the authority of the Save the Vaal case,[44] the 'processes (of exploration) are discrete stages in a single process that culminates in the production and combustion of oil and gas, and the emission of greenhouse gases that will exacerbate the climate crisis and impact communities' livelihoods and access to food'.[45] It found that production emissions are an important factor to be considered in the process of granting an exploration right. The court referred to expert testimony to support its position, which showed that *'most of the discovered reserves of oil and gas cannot be burnt if we are to*

[42] EIMS, Comments on the Draft Environmental Impact Assessment Report for the Proposed Africa Oil SA Corp Block 3b/4b Offshore Exploration, Eims Ref: 1570, pasa/Dmre Ref: 12/3/339, P. 32.
[43] *Sustaining the Wild Coast NPC & Others v Minister of Mineral Resources and Energy & Others*, High Court of South Africa, Eastern Cape Division, Makhanda – Case No. 3491/2021, at paras 120 to 125.
[44] Director: Mineral Development, Gauteng Region and Another v Save the Vaal Environment and Others (133/98)[1999] ZASCA 9 (12 March 1999).
[45] *Ibid*, para 123.

stay on the pathway to keep global average temperature increases below 1.5 degrees Celsius. Authorising new oil and gas exploration, with its goal of finding exploitable oil and/or gas reserves and consequently leading to production, is not consistent with South Africa complying with its international climate change commitments'.[46]

70. In addition, we submit that the risks of methane leakage have not adequately been assessed in the RDEIAR, and their impacts on fisheries. We draw your attention to recent studies that show that hydrocarbon wells, both active and abandoned, drilled into the seafloor may contribute substantial quantities of methane reaching the atmosphere.[47] Abandoned wells in both terrestrial and marine environments have been found to leak methane even after being plugged with concrete.[48] This means that the global society will be forced to bear the financial and health costs of increased greenhouse gas emissions long into the future, after this exploration project has concluded regardless of how the wells are capped and decommissioned. Fisheries along the west coast of South Africa, in particular, are predicted to be negatively impacted by climate change due to its effects on growth rates and reproduction.[49]

X. THE DEIAR FAILS TO CONSIDER CHILDREN'S RIGHTS IN THE CONTEXT OF CLIMATE CHANGE

71. In a letter addressed to the organisations, containing responses to our comments on the first DEIAR, the EAP undertook to update the SIA report to reflect a section on children's rights. However, the updated SIA report merely mentions (without consideration) the fact that children's rights to a clean, healthy and sustainable environment have been affirmed by the UN Committee on the Rights of the Child.

72. In fact, there is absolutely no attempt made to consider the project's impact on children's rights. The updated SIA report expressly states that "***Should the project move beyond exploration, this [children's rights] will be a critical aspect to consider***". This makes it blatantly clear that children's rights were not considered and that they will only be considered during the production phase of the project. This begs the question, <u>how else will we establish whether the exploration activities will have an impact on children's rights or not, if we do not consider them at all in this EIA</u>?

73. The EAP has failed to consider children's rights. Had the EAP considered children's rights, it would have established that children also have the <u>right to be heard</u> (*art 12 of the UN Convention on the Rights of the Child as well as paragraphs 26-28 of General Comment No*

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[46] *Sustaining the Wild Coast NPC & Others* at p. 121.

[47] *See*, e.g., Vielstädte, L., Haeckel, M., Karstens, J., Linke, P., Schmidt, M., Steinle, L., & Wallmann, K. (2017). Shallow gas migration along hydrocarbon wells–An unconsidered, anthropogenic source of biogenic methane in the North Sea. *Environmental science & technology*, *51*(17), 10262-10268.

[48] Kang, M., Kanno, C. M., Reid, M. C., Zhang, X., Mauzerall, D. L., Celia, M. A., ... & Onstott, T. C. (2014). Direct measurements of methane emissions from abandoned oil and gas wells in Pennsylvania. *Proceedings of the National Academy of Sciences*, *111*(51), 18173-18177; Vielstädte, L., Karstens, J., Haeckel, M., Schmidt, M., Linke, P., Reimann, S., ... & Wallmann, K. (2015). Quantification of methane emissions at abandoned gas wells in the Central North Sea. *Marine and Petroleum Geology*, *68*, 848-860.

[49] Potts, W. M., Götz, A., & James, N. (2015). Review of the projected impacts of climate change on coastal fishes in southern Africa. Reviews in fish biology and fisheries, 25, 603-630.

26 thereto). According to the UN Committee on the Rights of the Child, a child's right to be heard in the context of climate change, can only be satisfied through child friendly processes which include child friendly EIAs and public participation processes. It goes without saying that the public participation processes for this project was never designed to accommodate children and this underscores the fact that children's rights were not considered at all. It would be absurd for the competent authority to find that the project will not impact children's rights without such information at his or her purview.

XI. THE DEIAR FAILS TO ADEQUATELY ACCOUNT FOR RELEVANT INTEGRATED COASTAL MANAGEMENT CONSIDERATIONS

74. A new section has been added into the RDEIAR which describes the requirements of the National Environmental Management: Integrated Coastal Management Act. However, no attempts have been made to interrogate the requirements, instead placing the burden on the decision-maker to do so:

> "It is expected that the Competent Authority will consider the relevant factors listed above and where relevant the findings of this EIA (including but not limited to proximity to identified marine sensitive environments, impacts on marine environment, socio-economic impacts, potential pollution, the results of the public participation process, and the need and desirability of the proposed activity) when making a decision on this application."[50]

75. This is a proverbial "passing of the buck" to the decision-makers, who should be in a position to consider an assessment of the factors in a systematic way in the documents before them, when taking their decision.

76. The failure to interrogate the section 63 factors remains a fatal flaw in the RDEIAR.

XII. THE DEIAR DOES NOT ASSESS TRANSBOUNDARY IMPACTS

77. The RDEIAR contains no reference to the relevant authorities having actually been consulted, even if they were included in the I&AP database.

78. No revisions have been made to assess the impact beyond domestic borders. Consequently, we stand by the comments previously made in this respect.

XIII. THE DEIAR'S NEED AND DESIRABILITY ASSESSMENT IS FLAWED

79. No significant updates or amendments have been made on this section of the report, except the inclusion of the words "… ***and assist in bridging the country's current power shortages*** …".[51] The inclusion of these words underscores the point we made in our comments to the DEIAR, that it <u>justifies the need for the exploration by zooming into the</u>

[50] Page 44 of the Revised DEIAR.
[51] Page xliii of the revised DEIAR.

production phase of the project. The repeated reference to the benefits of future production on this section of the report contradicts the EAP's assertion that the RDEIAR only looks at the exploration activities and does not include production. It is understandable as to why the constant reference to "production" to justify the desirability of the project. This is because no real economic benefits can be derived from this project (exploration). This fact is also admitted in the updated SIA report, a direct quotation thereof reads as follows: "Since the on-board exploration activities undertaken as part of this project are largely automated, job creation and skills development opportunities will be minimal during the exploration phase."[52] When one considers the exploration activities alone, it is impossible to establish the need and desirability of the project and this is one of the reasons why an assessment of the entire life-cycle of the project is necessary.

80. Save to say that on the basis of this RDEIAR, this project (exploration) is neither needed nor desirable.

XIV. THE DEIAR FAILS TO ADEQUATELY ASSESS THE IMPACTS ASSOCIATED WITH DECOMMISSIONING AND WELL CLOSURE

81. Our previous submissions stand.

XV. THE DEIAR FAILS TO ADEQUATELY AND COMPREHENSIVELY ASSESS ECONOMIC IMPACTS

82. In making these comments, we rely on input from Gillian Hamilton, an economist working as Principal Consultant - Sustainability, Climate Change at Twig Consulting and as a researcher for Green Connection. Gillian has over 15 years of experience in the development sector, and holds a Masters and a BPhil (cum laude) in Sustainable Development from Stellenbosch University, and an Honours Degree in Economics (Trade and Development) from the University of Johannesburg. These comments are based primarily on expert input from Hamilton.

83. Based on the changes made to the Technical Report, the Economic Impact Assessment has been updated to take two unplanned event scenarios and the updated Oil Spill Drift Modelling Report (2024) into account. These are:
    1. the economic impact assessment of a condensate hydrocarbon subsea blow-out event; and
    2. an economic impact assessment of a crude oil subsea blow-out event.

84. However, the revisions fail to deal with the concerns that we raised in our comments on the DEIAR.

85. The Economic Impact Assessment (EconIA) notes that the capacity of such scenarios can create far reaching environmental, social and economic impacts and thus the potential of such scenarios must be considered (p.xx1). However, there is a flaw in the economic analysis as both scenarios continue to indicate a net positive impact of the blow-outs (i.e.

[52] Page 96 par 8.4.1 of the updated SIA report.

Total Quantified Economic Impact). The flaw is multifaceted because the direct, negative localised social, environmental and economic impacts and ramifications of both the exploration and the blow-outs are not sufficiently accounted for in the revised economic analysis. For example, the costs of the social ills and long-term ramifications on a microeconomic and localised level which have been proven to impact on local communities have not been included. These include increases in migration, negative health and educational impacts etc. Moreover, both disruptions in local economic activities through both the exploration phase and possible blow-outs haven't realistically provided analysis on how many businesses would be forced to shut down or declare bankruptcy, whether capital equipment would be repossessed and the longer-term implications on smaller or marginal businesses and employees or other repercussions. Neither does this analysis sufficiently address mitigation measures for affected peoples and business. The Covid-19 experience in South Africa provided some insight as to the vulnerabilities faced in the small-scale fisheries sector in SA and this experience likely to be repeated through both the exploration phase and possible blow-out situations.[53] Snowman et al. (2021) noted that (activities such as restrictions on fishing activities and mobility during Covid-19) '…have had significant impacts on small-scale fishers and coastal communities. The lack of social protection and the limited emergency relief…further exacerbated their precarious position.'.

86. With regards to the job creation aspect of this analysis, the concerns regarding the over-inflation of jobs (at all levels) and for South Africans in particular, has not been addressed in the updated EconIA.

87. Moreover, from a macroeconomic perspective, this analysis:

    - does not include Scope 3 emissions which will result from hydrocarbon production
    - does not include the social cost of carbon
    - does not include the mortality costs of carbon.

88. Each of these elements should be considered to fully understand the economic impacts of the downstream oil and gas activities – i.e. without these costs included in the analysis, we do not have a full picture of the economic impacts or benefits to South Africa.

89. Finally, the recent announcements about Shell withdrawing from South Africa is a warning that should be taken into account in the economic analysis: multi-national oil and gas corporations have no interest in the well-being of South Africans and of economic development for South Africa, despite the promises of increasing South Africa's GDP as in this updated EconIA. Moreover, global energy scenarios illustrate the global decline in oil and gas use – most of the scenarios illustrate the peak in oil in the 2020s or early 2030s, and then gradually decline from there. The drivers responsible for these differences range from policy assumptions and the pace of technological advances to the cost competitiveness of oil substitutes and beyond. But it is clear that there is a transition away from fossil fuels, including oil and gas, although scenarios differ as to the pace and scale

[53] Snowman, *et al*. 2021

of the transition.[54] As the world transitions to Net Zero, the accelerating pace of the energy transition increases the financial risk for countries who are "emerging petrostates". Emerging petrostates are those countries that have only recently discovered oil and gas and are wanting to exploit these discoveries.[55] Oil and gas producers will face a declining demand plus lower commodity prices on future revenues – and these aspects must be factored into development of new oil and gas projects as discoveries with less competitive breakeven price risk becoming stranded assets.[56]

90. Prince et al. (2023) warn: '…they run the risk of wasting precious capital on upfront oil and gas investments, without realising the future cashflows they may be planning for.' i.e. these 'assets' will likely be stranded before these countries are able to realise revenues. RystadEnergy (2024) adds that not only will demand for hydrocarbons be constrained, its likely that these discoveries will have less competitive breakeven prices – and it takes years to develop the infrastructure required to extract oil (Rainforest Foundation UK, Earth InSight 2022). Noticeably, faster and deeper energy transitions will affect demand more strongly and trigger higher risks of stranded assets.

91. The question this updated analysis should address is who really stands to benefit economically from oil and gas downstream activities in South Africa?

XVI. THE DEIAR FAILS TO ADEQUATELY AND COMPREHENSIVELY ASSESS IMPACTS ON CULTURE AND HERITAGE

92. The revised DEIAR now includes considerations of a well blow out, OBJ accepts that the impact will be high pre-mitigation but still concludes that such impact will be medium post-mitigation. The report underplays the significance of the impact of a well blow out on the spiritual connection that people have with the land and ocean. This is evident from the un-updated proposed mitigation measures, none of which address the impact on people's spiritual connection to the land and ocean.

93. Our comments on the DEIAR still stand.

XVII. PUBLIC PARTICIPATION HAS NOT BEEN MEANINGFUL AND EFFECTIVE

94. Our previous comments highlighted the need for an approach that not only acknowledges and addresses community concerns, but also fosters an environment of trust, inclusivity, and genuine collaboration with relevant stakeholders. The public participation process has so far failed to achieve meaningful consultation.

95. We wish to emphasise that the right to public participation is enshrined in the Constitution and therefore any participation process that functions as a tick-box exercise fails to give effect to the legal framework which requires this.

[54] International Energy Agency 2023, RystadEnergy 2024.
[55] Prince, *et al*. 2023.
[56] RystadEnergy 2024, Prince, *et al*. 2023.

96. Our previous comments highlighted some of the major issues with the current public participation processes, and these issues do not seem to have been remedied in this round of public participation.

97. Appendix 2.15 of the updated DEIAR contains the table of correspondence. It is notable that comments from various stakeholders have not been responded to meaningfully:

98. The comments submitted by Ernest Titus (page 81) which raised numerous concerns, one of them being the technical nature of the presentations which made it difficult to understand even when presented in Afrikaans. The response from EIMS has not engaged the numerous points but rather just acknowledged that these comments have been recorded and will be submitted.

99. The comments submitted by Ms Wendy Peckeur (page 89) on behalf of a number of people from Doringbaai, was not responded to in detail or engaged with but rather just "noted". The concerns from the community members should have been addressed.

100. Similarly, to the point above, the comments from Mr Edward Jantjies, Mr George Lenard Johnson, Charmaine Andrew, Loren Gosling, Ms Menka Vansant were not engaged with (pages 103-120).

101. The point raised by Mr Titus about the technical nature of the presentations should be given due consideration to as understanding of the content will directly impact engagement. For example, at the recent public participation meeting in Cape Town, there were no questions raised by the attendees. Whilst the reason for this is speculative, it is highly possible that people did not feel confident enough to raise questions if they were not able understand the presentations. This point has also been raised in relation to the presentation of data, above in these comments.

102. Similarly, as noted by EIMS, Ms Peckeur made a lot of effort to submit comments from a number of community members in Dooringbaai. However, there is no substantive engagement with their concerns which does not constitute meaningful consultation.

103. Regarding attendance and engagement with fishing communities, we reiterate that it is unthinkable that affected coastal communities can respond to each of these processes meaningfully. The ocean-based livelihoods of many coastal communities, particularly small-scale fishers, are recognized in the DEIAR. This means that fishers must fish for a living, requiring them to be out at sea daily or for extended periods of time. Even if they wish to do so, they do not have the time or resources to attend multiple public meetings, engage with voluminous technical information and provide comments and appeals. It is further notable that historic barriers to accessing education and the impact of Apartheid means that these communities have significantly lower levels of literacy making engagements with voluminous documents almost impossible.

104. The result, even if unintended, is that those who have less resources, are required to be out at sea to make their livelihoods or are unable to fully understand the different

proposals and processes, are significantly prejudiced by the onslaught of applications, and are not able to engage meaningfully in each process.