



REPORT ON PUBLIC COMMENTS

Sauropod 3D Marine Seismic Survey
(WA-527-P)

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Document Status

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Report on public comments

CGG Services (Australia) Pty Ltd (CGG) is proposing to undertake the Sauropod 3D marine seismic survey (hereafter referred to as the Sauropod 3D MSS) in exploration permit area WA-527-P, which is located on the North West Shelf in the Roebuck Basin. An Environment Plan (EP) was previously accepted by NOPSEMA for this activity on the 16 February 2022, however CGG is now planning to conduct the survey in WA-527-P under a revised and updated EP. The purpose of the Sauropod 3D MSS is to collect three-dimensional (3D) geophysical data about the underlying rock types to inform oil and gas exploration.

This report on public comments has been prepared in response to comments received during the September/October 2023 public comment period. Only one comment was received in the 2023 public comment period. The comment was from a person who was already considered a relevant person in the EP. Therefore, their comment was dealt with via the consultation process described in the EP. The response provided to the relevant person is provided in Table 1.

The Sauropod 3D MSS EP was previously published for public comment in September 2022. The proposed activity schedule has since been modified, triggering the need for another public comment period in 2023 (Regulation 11(C)). There was a comment received from a person who was already considered a relevant person in the 2022 EP. Therefore, their comment was dealt with via the consultation process described in the 2022 EP. The response provided to the relevant person is provided in Table 2.

A number of comments were received during the 2022 period that did not relate to the EP, or the activity to which the EP relates. These comments related to:

- Fracking
- Generally against oil and gas/ seismic survey/ fossil fuels
- Climate change
- Climate change commitments (Paris Agreement)
- Further research required.

Due to the irrelevancy of the comments, they were not considered further in preparing the EP.

The comments received that relate to the EP have been grouped into similar 'matters' and responded to in the 2022 Public Comment Report, referenced here in Table 3. There were no changes made to the 2022 EP in response to public comments as the EP already addresses the matters and claims raised.



Table 1: 2023 Public comment period: Relevant person comments

#	Comment received	Titleholder response
	There has been inadequate consultation (insufficient time to consult, inconsistent with international best practice) and previously raised concerns regarding impacts to marine parks have not been adequately addressed in the EP.	<p>CGG does not consider from 2/6/23 to 18/10/23 to be insufficient time to review the proposed activity for a relevant person.</p> <p>The relevant person has duplicated their previous query regarding potential impacts to marine life. CGG provided a comprehensive response to the previous query, including section references to where in the EP the queries were addressed. The relevant person also requested information on where in the EP demonstrated impacts to marine parks have been assessed. This information has not changed since the previous response, which was provided again to the relevant person for reference. A request for clarity on what aspects of CGG's response they would like further information on was also included.</p>

Table 2: 2022 Public comment period: Relevant person comments

#	Comment received	Titleholder response
1.	The relevant person has no record of having received an email and that more rigorous methods of contact ought to apply to ensure that all stakeholders are given the opportunity to engage.	The person was identified as a relevant person and CGG has made reasonable efforts to provide information to the relevant person in line with the consultation process outlined in the EP regarding the activity in order for the relevant person to respond. CGG sent emails on 5/07/21, 25/02/22, 20/06/22, and 22/07/22, with no bounce back of emails to indicate they were not received and no response to invitations for consultation. To reduce stakeholder fatigue and inadequacy of posted letters in comparison to emails, CGG considers this adequate to consult with the relevant person.
2.	The Rowley Shoals overlaps the northern portion of the Proposal's Acquisition Area. These areas include regions of high biological diversity and contain important breeding and feeding grounds for marine wildlife.	CGG notes that the Rowley Shoals does not overlap the Acquisition Area or the Operational Area– please refer to Figure 4-15 in the EP.
3.	The Proposal has the potential to produce direct and indirect impacts to ecologically significant communities associated with the Argo-Rowley Terrace AMP, including unacceptable impacts to coral reefs, seagrass communities, mangroves, migratory birds, sea turtles, sea snakes, whales, diverse finfish communities.	The residual risk associated with underwater noise emissions from the seismic source has been assessed as Medium and will not have a 'significant impact' upon Protected Matters in accordance with EPBC Policy Statement 1.1. – Significant Impact Guidelines. No impacts are predicted to occur to the natural or



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	<p>4. The risks of seismic noise to marine life have been downplayed, and measures proposed to avoid or mitigate harm are insufficient. The literature establishes that seismic can impact many species of marine mammals, reptiles, fish and invertebrates.</p>	<p>cultural heritage values of the Argo-Rowley Terrace, Mermaid Reef or Eighty Mile Beach AMPs as a result of underwater noise from the seismic source.</p> <p>The environmental risk assessment methodology followed by CGG is to international standards and clearly defined in the EP. The assessment of planned and unplanned events associated with the seismic survey is thorough and the process of defining control measures to reduce the impacts and risks to as low as reasonably practical and acceptable levels also clearly defined. Through this process, CGG has reduced the impact of underwater noise emissions from the seismic source to prevent serious or irreversible ecological damage. Impacts are expected to have a Negligible or Minor consequence. The impact of seismic noise to marine life and potential interactions are understood and managed in accordance with EPBC Policy Statement 2.1 and applicable industry standards and best practice guidance.</p> <p>Seismic survey activities will be undertaken in alignment with the EPBC Act Part 3 (18A and 20A) and Significant Impact Guidelines 1.1, whereby activities do not have a significant impact on a listed threatened or migratory species population or a listed threatened ecological community, and do not result in the mortality or physical injury of an individual of an EPBC listed (marine fauna) species.</p> <p>The predicted level of impact from underwater noise emissions from the seismic source does not exceed the defined acceptable level of impact to marine fauna given the controls adopted will prevent mortality or physical injury to EPBC listed marine fauna species and prevent a significant impact on a listed threatened or migratory species population or a listed threatened ecological community.</p>
	<p>5. The EP presents the predicted acoustic parameters for the seismic testing. At close range the peak sound level exceeds a level that could produce permanent damage to cetaceans and other marine fauna.</p>	<p>The assessment of potential noise impacts in the EP are based on modelling of seismic noise attenuation completed in 2020 for an earlier accepted MSS EP for the same area, which was based on a larger seismic array than is planned to be used for the Sauropod survey by CGG. The impact assessment is based on the larger seismic array, which is a conservative approach to assessing the effects of noise emissions because the potential for impacts is lower but the same level of mitigation and management will be applied, and the net environmental risk is reduced. JASCO was engaged to compare noise emissions from the original arrays and the smaller array. This study confirms that the smaller array produces lower noise levels at the source.</p>



#	Comment received	Titleholder response
		<p>Using the conservative assessment, the residual risk associated with underwater noise emissions from the seismic source has been assessed as Medium and will not have a 'significant impact' upon Protected Matters in accordance with EPBC Policy Statement 1.1. – Significant Impact Guidelines. The activity will be undertaken in a manner consistent with the applicable objectives and actions of the marine reserve management plans, species conservation or recovery plans, threat abatement plans, and conservation advice for identified values and sensitivities of the marine environment.</p> <p>The predicted level of impact from underwater noise emissions from the seismic source, as assessed above, does not exceed the defined acceptable level of impact to marine fauna. With the controls proposed, including enhanced controls as recommended in EPBC Act Policy Statement 2.1 Part B, no injury/hearing impairment (PTS or TTS) are expected to occur to any Pygmy Blue Whale within a biologically important area and no blue whale is expected to be displaced from a foraging area.</p>
6.	<p>Elliott et al (2019), question the effectiveness of visual monitoring for marine fauna under some conditions and the difficulties in detecting animals below the ocean surface.</p>	<p>The activity is consistent with EPBC Act Policy Statement 2.1 Part B.1 Marine Mammal Observers, and that the ALARP Demonstration has considered additional methods of detecting cetaceans and controls to reduce the predicted levels of impact.</p> <p>The predicted level of impact from underwater noise emissions from the seismic source does not exceed the defined acceptable level of impact to marine fauna. With the controls proposed, including enhanced controls as recommended in EPBC Act Policy Statement 2.1 Part B, no injury/hearing impairment (PTS or TTS) are expected to occur to any Pygmy Blue Whale within a biologically important area and no blue whale is expected to be displaced from a foraging area.</p> <p>The proposed timing of the Sauropod 3D MSS (between January and May) has been selected to limit overlap with the Pygmy Blue Whale migration periods (April to August and October to December) and therefore reduce the risk of impacts to individual Pygmy Blue Whales that may occur outside of the migration BIA. Restricting the MSS schedule to completely avoid Pygmy Blue Whale migration periods will significantly increase vessel contracting fees and place logistical constraints (e.g. weather and vessel availability) that jeopardise the viability of the survey. The costs of limiting the acquisition window further to avoid the Pygmy Blue Whale migration entirely are grossly disproportionate to any potential</p>



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		<p>environmental benefit gained. The migration BIA is located is located 72 km to the north of the Operational Area. The predicted maximum distance to the marine mammal behavioural threshold is approximately 8.4 km (refer Table 7 5). The survey is not anticipated to significantly inhibit the migration of Pygmy Blue Whales since the ensonified area only overlaps a small proportion of their known distribution area. There are no known Pygmy Blue Whale foraging areas within the vicinity of the activity, with the closest possible foraging area identified to be approximately 400 km from the Operational Area. Therefore, no significant behavioural impacts are expected to occur.</p> <p>Adaptive management measures to cease night-time operations have been adopted to reduce impact any Pygmy Blue Whale in low visibility or night-time conditions. In addition, an increased shutdown zone of 3 km has been adopted to reduce TTS/PTS impact to a Pygmy Blue Whale or potential Pygmy Blue Whale.</p> <p>Consistent with the previous Conservation advice for Humpback whales (prior to the delisting of the species in effect under the EPBC Act from 26-Feb-2022), acoustic modelling was undertaken to assess the potential single pulse and cumulative sound exposure impacts on Humpback whales.</p> <p>The seismic survey will also be undertaken consistent with Part A of EPBC Act Policy Statement 2.1, although the survey will not take place near a calving, resting or foraging area.</p> <p>The proposed timing of the Sauropod 3D MSS (between January and May) has been selected to avoid the Humpback whale migration through the region, therefore, no impacts to Humpback whales are expected.</p>
7.	The operational times between January to May will overlap Pygmy Blue Whale migration.	CGG understands that the Pygmy Blue Whale migration and distribution BIAs pass along the shelf edge at depths between 500 m and 1,000 m. The Operational Area overlaps with the distribution BIA; however the migration BIA is located 72 km from the Operational Area. Acquisition of the survey may overlap the commencement of the northbound migration (April), but avoids the southbound migration period for Pygmy Blue Whales in the region (October – December).
8.	OA overlaps with Whale Shark biologically important areas (BIA) but not the July-November migration. Whale Sharks, nevertheless, are anticipated to be present in the OA during the Proposal, but in lower numbers.	CGG has assessed the impact of noise emissions to whale sharks in the EP. As shown in Table 7- 8 of the EP, the maximum predicted Rmax distance to the noise injury threshold in the water column for the hearing group of fishes without swim



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	(The significance of impact to even low numbers of EPBC Act listed species is not discussed in the EP.)	bladders, is 60 m. The maximum predicted Rmax distance to the TTS threshold for this fish hearing group is ~2.8 km. It is important to appreciate that individual whale sharks would have to remain within a range of approximately 2.8 km of the operating seismic source (which is also moving) for a full 24-hour period to be exposed to sound levels that could cause TTS. As discussed in Section 7.1.5.4.2.3 of the EP, seismic noise has not been identified as a threat to Whale sharks (or other shark species identified that may be present in the region) in either the Approved Conservation Advice (TSCC 2015) or previously in force Whale Shark Recovery Plan 2005 – 2010 (DEH 2005). Noise pollution is not identified as a pressure to Whale sharks in the Marine Bioregional Plan for the NWMR (DSEWPaC 2012), or in the Ningaloo Coast: World Heritage nomination report (Commonwealth of Australia 2010).
9.	There are numerous marine species that may be present around the Rowley Shoals. It is likely that some species will be unacceptably impacted by seismic testing, at the dB levels anticipated, and particularly if the species migration, breeding, or foraging grounds are in close proximity to the OA.	The predicted level of impact from underwater noise emissions from the seismic source, as assessed in Section 7.1 of the EP, does not exceed the defined acceptable level of impact to Marine Fauna or Ecological Communities Listed as Threatened or Migratory under the EPBC Act (MNES). In addition, the predicted level of impact from underwater noise emissions from the seismic source, does not exceed the defined acceptable level of impact to non-listed marine fauna. The residual risk associated with underwater noise emissions from the seismic source has been assessed as Medium and will not have a 'significant impact' upon Protected Matters in accordance with EPBC Policy Statement 1.1. – Significant Impact Guidelines.
10.	For many species likely to be found in the OA, there are noted data gaps and uncertainties relating to impacts from seismic testing. Without adequate data on the acoustic impacts to sea snakes, what is the Proponent's capacity to make any generalised statements on the likely risks.	CGG has used the best available literature to assess noise impacts to marine reptiles. Chapis et al. (2019) found the hearing sensitivity for the Stokes sea snake ranges from 40-600 Hz. The findings of the study concluded that sea snakes possess a relatively low hearing sensitivity for sound pressure and particle acceleration when compared to other marine invertebrates (both fish and marine turtles). Therefore it is considered conservative to apply the sound thresholds for marine turtles to sea snakes in the absence of further data.
11.	Impacts to fish from seismic noise are not certain.	CGG notes that the data relating to fish impacts is uncertain. CGG has provided a balanced and thorough review of potential impacts to fish in reaching conclusions described in the EP.
12.	Australian environmental law operates with precaution as a guiding principle. The survey approval should be delayed until such time as more data becomes available;	CGG applies the Oil and Gas UK (OGUK) (2014) Guidance on Risk Related Decision Making to determine the assessment technique applied for each impact



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	<p>until such time that risks can be conclusively established as insignificant; or until such time as alternative technologies or practices are available to mitigate harm.</p>	<p>or risk. CGG has considered previous impact and risk assessments for similar activities, review of relevant published studies (peer reviewed and grey literature) and stakeholder consultation concerns/feedback. Wherever possible, site-specific and activity-specific data has been used in the impact/risk assessment; however, in order to address areas of uncertainty, a precautionary approach has been taken and a conservative or “worst case” approach has been applied where there is uncertainty in the level of harm. As discussed in the impact assessment method of the EP (Section 6) the precautionary approach requires uncertainty in the analysis to be addressed by using conservative assumptions that may result in a control measure being more likely to be adopted.</p>
<p>13.</p>	<p>Visual monitoring for large marine fauna during seismic surveys is unreliable.</p>	<p>The activity is consistent with EPBC Act Policy Statement 2.1 Part B.1 Marine Mammal Observers. The ALARP Demonstration in Sections 7 and 8 of the EP has considered additional methods of detecting cetaceans (e.g. PAM), but in general available PAM systems not that good at detecting low-frequency mysticetes (e.g. PBW, humpback whale). Additionally, survey acquisition is timed to avoid the Humpback whale migration season. Other potential methods for detection (e.g. aerial surveys, additional spotter vessels) have been ruled out as clearly disproportionate to benefit gained. Adaptive Management Measures have been applied to further reduce the low likelihood of impacts to Pygmy Blue Whales as timing for the survey may overlap with the possible presence of this species in the region and as the Operational Area overlaps the distribution BIA for the species.</p>
<p>14.</p>	<p>Two other proposed seismic surveys within 100 km of the Proposal are listed by the Proponent as possibly temporarily overlapping with the Proposal. The cumulative impacts of these and other aspects of offshore projects (e.g., from drilling operations, spills, emissions, etc.) are not discussed in any detail in the EP.</p>	<p>Section 7.2 of the EP assesses the potential for cumulative impacts associated with Sauropod 3D MSS being undertaken in an area where other seismic surveys have occurred previously and concurrently (at the same time) as other marine seismic surveys in the areas. This includes the assessment of three seismic surveys that may occur within the same EP time frames and have an EP accepted by NOPSEMA or have submitted an EP to NOPSEMA and is currently under assessment.</p> <p>It is important to note that, while some of these seismic surveys may go ahead in 2023 or 2024 and some have the potential to occur at the same time as the Sauropod 3D MSS, for commercial reasons such as availability of a survey vessel it is not credible for all the surveys to occur concurrently (discussions with titleholders indicate that this is likely to be the case in 2023). It is also uncertain that the entire stated maximum survey areas will be acquired. For example, the</p>



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		<p>final Acquisition Area for the multi-client Searcher Possum MSS is yet to be defined (the area stated in the EP being a maximum). CGG is currently undertaking consultation with the relevant titleholders and seismic companies for these seismic surveys to determine a maximum credible acquisition scenario for 2023 or 2024.</p> <p>The EP presents concurrent impact assessment to marine fauna, fish and elasmobranchs, fish spawning, plankton, fish eggs, larvae, benthic invertebrates, and commercial fisheries over 19 pages and therefore CGG disagrees that the cumulative impact from seismic surveys is not discussed in detail.</p> <p>Section 7.8 of the EP discusses the impact of air emissions including the contribution of greenhouse gases (GHG) and pollutants to the atmosphere. It is acknowledged in Section 7.8.2 of the EP that the seismic survey vessel and support vessels present in the Operational Area will generate atmospheric emissions from power generation and waste incineration. Atmospheric emissions have the potential to result in a localized reduction in air quality in the immediate vicinity of the vessel exhaust and to contribute to Australian and global levels of GHG in the atmosphere. Given the low level of emissions anticipated, survey emissions only represent a very small contribution to overall Australian and global GHG emissions to the atmosphere.</p>
<p>15.</p>	<p>Synergistic, additive, or antagonistic interactions between seismic sound impacts and other stressors has not been studied. Additional pressures to reef and other ocean ecological systems, including sea level rises; changes in sea temperature; and ocean acidification, resulting from climate change; marine debris; physical habitat modification; oil production; and invasive species (in accordance with DCCEEW 'sprat' identified pressures), should also be considered in environmental assessments for all offshore oil and gas.</p>	<p>The OPGGS Act provides the regulatory framework for all offshore petroleum exploration, production and greenhouse gas (GHG) activities in Commonwealth waters. The related OPGGS (E) Regulations require titleholders to undertake their petroleum activity in accordance with an EP accepted by NOPSEMA. This EP has been prepared to meet the requirements of the OPGGS (E) Regulations. Under the OPGGS (E) Regulations titleholders are not required to assess "synergistic, additive, or antagonistic interactions between seismic sound impacts and other stressors". The EP includes a cumulative/additive impact assessment of historic seismic surveys acquired in the vicinity of the proposed Sauropod survey, and surveys that may be acquired concurrently with Sauropod in Section 7.2.</p>
<p>16.</p>	<p>The Proposal presented to NOPSEMA for assessment is part of the larger oil and gas extractive industry. The impacts from the preliminary stages (i.e., seismic surveys) of the larger project should not be assessed in isolation.</p>	<p>CGG cannot respond regarding the regulatory process.</p>



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17.	One source of the emissions is cited as coming from waste incineration offshore. The Proponent has deemed onshore disposal to be not viable for cost, safety, and environmental reasons. The latter points require re-evaluation. No evidence is presented by the Proponent that onshore disposal would generate more emissions.	In line with good industry practice, vessel incinerators will be maintained to manufacturer’s specification and in accordance with MARPOL 73/78 Annex VI to reduce the atmospheric emissions released into the environment during the survey. Onshore disposal would require an additional supply vessel visit to collect and transfer the waste to shore. An additional supply vessel trip would increase the amount of emission generated in comparison to not running that trip. This is outlined in Section 7.8.4 of the EP.
18.	The use of renewable energy options has been deemed by the Proponent not commercially viable.	There are currently no renewable energy options that are viable for vessels other than short voyages or domestic ferries. Given the low-level of risk identified, this option is not considered commercially viable. Non-fuel powered engines are not considered technically efficient to execute.

Table 3: 2022 Public comment period comments

#	Comments received	Titleholder response
1	<p>Matter: Impacts to scallop/zooplankton - mortality</p> <p>Claims:</p> <ul style="list-style-type: none"> Seismic blasting can kill scallops and tiny zooplankton more than a kilometre away. Have the effects of killing off masses of zooplankton on marine mammal populations been studied and considered before approving this activity? 	<p>A comprehensive assessment of the potential effects of seismic noise on zooplankton and scallops is provided in Sections 7.1.5 of the EP, using the latest Australian and international research. The predicted maximum distance that zooplankton could suffer mortality is 130 m from the seismic source. While some mortality of zooplankton is possible, the overall consequence is expected to be negligible, and less than natural mortality rates.</p> <p>While some mortality of scallops is possible within close range of the seismic source, the overall effect is expected to be slight and short-term. Sub-lethal effects to exposed scallop are also possible in sites very close to seismic sources, but are likely to recover in the weeks or months following exposure with no change in community structure expected.</p> <p>In accordance with the management controls set out in Section 7.1.7, the seismic activity will be managed so that potential impacts and risks to zooplankton and scallops are</p>



#	Comments received	Titleholder response
		<p>reduced to ALARP and Acceptable levels in accordance with the environmental regulatory requirements for the Sauropod seismic survey. There is no residual or long-term impact expected from routine operations to zooplankton or scallops.</p>
2	<p>Matter: Impacts to Marine Parks, Reefs and Shoals - vicinity to survey Claims:</p> <ul style="list-style-type: none"> • Strong concern regarding a seismic survey in this area due to its proximity to the Mermaid Reef Marine Park which includes biodiverse ecosystems characterised by emergent and deep reef flats, lagoon and submerged sand habitats, as well as over 214 coral species, 530 fish species and a huge array of invertebrate fauna and that the impacts to marine life in the marine parks has not been addressed. • Seismic exploration should not be permitted in, or close to, marine parks. 	<p>The Sauropod survey area is in close proximity to, but not within the Mermaid Reef Australian Marine Park, which is 69 km away from the Operational Area. A comprehensive assessment for the potential impacts on the marine parks in the vicinity of the survey is provided in Section 7.1.5.9 of the EP, while biological receptors expected within the marine parks are addressed in Section 7.1.5 of the EP. Based on the timing and duration of the Sauropod 3D MSS and the control measures that will be implemented, predicted noise levels from seismic acquisition are not considered likely to cause any impacts to the natural or cultural heritage values of any AMP in the region, including the Mermaid Reef Australian Marine Park. The relevant management controls are indicated in Section 7.1.7, outlining the potential impacts to the marine parks will be mitigated to ALARP and Acceptable levels in accordance with the environmental regulatory requirements for the Sauropod seismic survey.</p>
3	<p>Matter: Impacts to whales and dolphins Claims:</p> <ul style="list-style-type: none"> • Seismic blasting can damage whales' hearing and keep them away from key feeding and breeding grounds. • Whales are put off from migratory pathways • Seismic activity is responsible for the stranding of whales off the Tasmanian coastline and so should be stopped. 	<p>The Operational Area overlaps the distribution Biologically Important Area (BIA) for Pygmy Blue Whales, while the Humpback Whale migration BIA is located 15 km south and the Pygmy Blue Whale migration BIA is located 72 km north. Therefore, large populations of whales are not expected to occur within the Operational Area, though small numbers are still possible. Further evaluation of the cetaceans expected within the Operational Area and EMBA are further outlined in Section 4.3.6, while the potential risks of seismic survey on cetaceans are outlined in Section 7.1.5.1 of the EP.</p> <p>Based on the timing and duration of the survey, the absence of critical habitats for any species of cetacean (i.e. feeding, breeding, calving areas) or a constricted migratory pathway within the Operational Area and surrounding waters, and the</p>



#	Comments received	Titleholder response
		<p>control measures proposed, predicted noise levels from seismic acquisition are not considered likely to cause injury or disturb foraging activity for Pygmy Blue Whales or any other species of large whale that may be present within or adjacent to the Operational Area. The seismic activity will be mitigated to ALARP and Acceptable levels in accordance with the environmental regulatory requirements for the Sauropod seismic survey, as outlined in Section 7.1.7 of the EP.</p> <p>The stranding of 230 pilot whales at Macquarie Harbour in western Tasmania in September 2022 is not linked to MSS. There were no MSS occurring near the Harbour during this event, or the 2020 stranding event. Whale strandings are a common occurrence on the western coast of Tasmania, long before seismic surveying. The Australian seismic survey industry has operated with well-defined regulations and guidelines to minimise any impacts on cetaceans, as outlined in Section 4.3.6, and there have been no reported cases of injury or death from MSS in Australian waters.</p>
4	<p>Matter: Activity within a pristine and rare marine environment</p> <p>Claims:</p> <ul style="list-style-type: none"> • The impact it will have on the pristine marine environment will be catastrophic • Will be devastating for the regions impacted • One of the most pristine and thriving we have left • The fact that this area is remote is another reason to stop this project • Some of the most remote and pristine marine reserves in the world • Strongly urge you to abandon this project on the grounds of the ecological significance of surrounding marine parks and the high range of biodiversity found within these hotspots as well as within the wider surrounding waters. 	<p>A comprehensive assessment of the environmental values and biological receptors in the vicinity of the seismic survey are outlined in Section 4.2 and 4.3 of the EP. The potential impacts of the seismic survey on these values and receptors are outlined in Sections 7 and 8 of the EP. Based on the timing and duration of the Sauropod 3D MSS and the control measures that will be implemented, predicted noise levels from seismic acquisition are not considered likely to cause any impacts to the natural or cultural heritage values of any AMP in the region. The seismic activity will be managed so that potential impacts and risks to the environmental and biological receptors that may occur in the marine parks are not inconsistent with the requirements of the marine park management plans. In accordance with the management controls set out in Sections 7 and 8, the seismic activity will be managed so that the potential impacts and risks to environmental and biological receptors in the marine parks are reduced to ALARP and Acceptable levels in accordance with the environmental regulatory requirements for the Sauropod seismic survey.</p>



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5	<p>Matter: Impacts to commercial fisheries</p> <p>Claims:</p> <ul style="list-style-type: none"> • There is evidence that seismic activity impacts current and future catch rates of commercial fisheries • The oil and gas industry should pay compensation for any damage caused by their activities, such as to fishers who find their catches have suddenly declined. • Seismic has caused impacts to rock lobsters near Tasmania, the females are not fully berried. 	<p>A detailed assessment of the potential effects of seismic sound on fish and fisheries is provided in Sections 7.1 and 7.2 of the EP. Based on the timing and duration (up to 60 days) of seismic acquisition, the potential impacts from the seismic source on commercial catch rates during the Sauropod 3D MSS are considered to be slight and short-term. Survey acquisition will be timed to avoid or limit temporal overlap with the spawning periods for key indicator species for commercial fisheries and commercial fishing operations. CGG has determined that compensation for commercial fishers is an appropriate control for the Sauropod 3D MSS and will implement the NERA (2021 – Revision 1) CSEP Commercial Fishing Industry Adjustment Protocol (NERA Protocol) to formally manage claims by commercial fishing stakeholders for loss of catch, displacement and lost or damaged fishing gear as a consequence of survey activities.</p> <p>In accordance with the management controls set out in Section 7.1.8, the seismic activity will be managed so that potential impacts and risks to fish and fisheries are reduced to ALARP and Acceptable levels in accordance with the environmental regulatory requirements for the Sauropod seismic survey.</p> <p>The potential impacts of the seismic survey on lobsters are outlined in Section 7.1.5.5 of the EP. The latest Australian and international research indicates that there are no likely impacts of seismic activity on adult or larvae lobsters. Furthermore, in accordance with the management controls set out in Section 7.1.8, the seismic activity will be managed so that potential impacts and risks to lobsters are reduced to ALARP and Acceptable levels in accordance with the environmental regulatory requirements for the Sauropod seismic survey.</p>
6	<p>Matter: Impacts to sharks</p> <p>Claims:</p> <ul style="list-style-type: none"> • Seismic surveys have the potential to disrupt migration and breeding patterns of several shark species including the silver 	<p>A comprehensive assessment of potential shark species in the vicinity of the seismic survey is outlined in Section 4.3.7 of the EP. The potential impacts of the seismic survey on sharks are outlined in Section 7.1.5.4 of the EP. While the PMST search didn't indicate any overlap with silvertip whaler, grey reef or scalloped hammerhead</p>



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	tip, grey reef and scalloped hammerhead sharks commonly found within the vicinity of the Mermaid Reef Marine Park.	important habitats, they are known to inhabit the Mermaid Reef Marine Park, 69 km north of the Operational Area. However, due to the distance of the seismic activity to the Mermaid Reef Marine Park, the impacts to other shark species are expected to be negligible. In accordance with the management controls set out in Section 7.1.8, the seismic activity will be managed so that potential impacts and risks to fish and fisheries are reduced to ALARP and Acceptable levels in accordance with the environmental regulatory requirements for the Sauropod seismic survey.
7	<p>Matter: Impacts to turtles</p> <p>Claim:</p> <ul style="list-style-type: none"> Seismic activity has contributed to the decline of turtle populations. 	<p>A comprehensive assessment of potential marine reptiles (including turtles) in the vicinity of the seismic survey is outlined in Section 4.3.8 of the EP. The latest Australian and international research indicates that there is no likely correlation between seismic activity to turtle population decline, and are referenced in the EP. There are no turtle biologically important areas or critical habitats within the Operational Area of the EP. The closest turtle habitat to the survey is the flatback turtle internesting buffer at Eighty Mile Beach, approximately 60 km from the Operational Area. The proposed timing for acquisition of the Sauropod 3D MSS (between January and May) means that there will be overlap with the nesting and breeding seasons for Green, Flatback, Loggerhead, Hawksbill and Olive ridley turtles in the region (October to March). Hence, there is a low probability of isolated individuals transiting through the Operational Area during acquisition of the survey.</p> <p>The potential impacts of noise emissions from the seismic source on marine turtles during acquisition of the Sauropod 3D MSS are considered to be slight and short-term, and restricted to temporary behavioural changes (avoidance) in any isolated individuals that may transit the area in close proximity to the operating seismic source. Based on the timing and duration of the survey, the separation distances to BIAs and 'Habitat Critical' areas, and the control measures proposed, predicted noise levels from seismic acquisition are not considered likely to cause PTS effects, displace any individuals from the internesting BIA or 'Habitat Critical' areas, or result in any ecologically significant</p>



#	Comments received	Titleholder response
		impacts at a population level for any species of turtle that may be present within or adjacent to the Operational Area during the survey.