Defined Acceptable Levels Appendix D and E Impact and Risk Assessments (Section 6 - Defining Acceptable Levels)				Demonstration Impacts will be acceptable Acceptable Levels and EPOs (Section 10)	Acceptable Levels and EPOs Appendix D and E Impact and Risk Assessments (Section 11 - EPOs)		Appendix F3 - Further Assessment (if applicable) where there may be discussion to demonstrate accepable level.	Appendix F4 - Acceptable Levels Assessment	Appendix G1 - Environmental Performance EPOs	Summary of Issues							
Appendix	**Category**	**Defined acceptable level (general)**	**Defined acceptable level (aspect specific)**	**Comments**	**Defined Acceptable Level**	**EPO**											
E7 - Marine Mammals	ESD	The petroleum activity results in temporary / reversible, small scale, and/or low intensity environmental damage.	Marine mammals can continue critical life-cycle stages and are not injured.	Case made under 'Temporary and Reversible' and 'Natural Variation' heading address no long term impacts. Case made under 'Based on sufficient information' argues tha site-specific modelling and small predicted zones of impacts demonstrates that no serious or irreversible harm was predicted and the level of scientific uncertinaty is low therefore the precautionary principle was not triggered. This is not consistent/commensurate with the impacts assessed in relation to SRWs and BWs. See if the Further Assessment in F3 addresses this. Potentially addressed in the impact assessment text itself, but not clear. **THERE IS NO CLEAR DEMONSTRATION AGAINST EACH defined acceptable level that explains why it is achieved. Whether this is done in Section 10 or (more likely) Appendix F4, this would aid the EP significantly.**	Marine mammals can continue critical life-cycle stages and are not injured.	As a result of shutting down or relocating the sound source when whales enter shutdown zones, no physical injury or sustained interference with marine mammal lifecycle behaviours occurs during the activity.		Section 5.1 to 5.4 of F4 are largely generic text/statements that talks to process, comprehensive assessment, etc. Section 5.5 and 5.6 are impact- and risk-specific. Generic, unsubstatiated statements only. THERE IS NO DETAILED RATIONALE COMPARING DEFINED ACCEPTABLE LEVELS AGAINST PREDICTED ACCEPTABLE LEVELS. WE ARE FORCED TO PIECE TOGETHER DEMONSTRATION OF ACCEPTABLE LEVELS FROM THE IMPACT ASSESSMENTS (Appendix Es and F3). This goes to back to the original form/structure of the EP issue raised in the first RFFWI. Not a reason to refuse on these grounds only, but noting for feedback.	As a result of shutting down or relocating the sound source when whales enter shutdown zones, no physical injury or sustained interference with marine mammal lifecycle behaviours occurs during the activity.							
		The impact and risk assessment process is based on sufficient information to understand if: Serious/irreversible environmental damage is predicted; or the application of the precautionary principle is applied in the presence of scientific uncertainty.	Anthropogenic threats are managed consistent with ecologically sustainable development principles to facilitate recovery of all threatened whales. Has uncertainty been addressed?		Anthropogenic threats are managed consistent with ecologically sustainable development principles to facilitate recovery of all threatened whales.	As a result of complying with the activity limitations and environmental performance standards in place to protect threatened whales, environmental impacts and risks associated with the activity are managed in a manner that is demonstrably consistent with ecologically sustainable development principles. Consider if the EP adequately demonstrated consistent with ESD and precautionary principle?			As a result of complying with the activity limitations and environmental performance standards in place to protect threatened whales, environmental impacts and risks associated with the activity are managed in a manner that is demonstrably consistent with ecologically sustainable development principles. Consider if the EP adequately demonstrated consistent with ESD and precautionary principle?							
		Environmental management of the activity must not be inconsistent with EPBC Act Management Plans and Recovery Plans.	**Anthropogenic noise in biologically important areas must be managed such that any blue whale is not displaced from a foraging area.** No mention of injury or TTS, but this is addressed separately below	Case made under 'Activity not inconsistent with the EPBC Act' talks to Recovery Plans and PS2.1. Whether this is achieved depends on the controls supported by modelling - uncertainty. We are required to make our conclusion from the impact assessment (see F3 and F4)	Anthropogenic noise in biologically important areas must be managed such that any blue whale is not displaced from a foraging area.	As a result of shutting down or relocating the sound source when a blue whale is observed within 5 km, blue whales will not be behaviourally disturbed within this range, leading to the protection of important foraging areas and avoidance of displacement. Uncertainty over model predictions	Assessment of blue whales in F3 does not include any material updates that talk further to defined acceptable level. Therefore our assessment must be based on E7, F4 and G1, which relies on the 5km shutdown range to prevent displacement from foraging area and TTS, but uncertainty re the modelling.		As a result of shutting down or relocating the sound source when a blue whale is observed within 5 km, blue whales will not be behaviourally disturbed within this range, leading to the protection of important foraging areas and avoidance of displacement. Uncertainty over model predictions	**Some EPOs based on mitigation ranges which are based on uncertainty with model predictions.**						
			Actions within and adjacent to southern right whale BIAs and HCTS should demonstrate that they do not prevent any southern right whale utilising the area or cause auditory impairment.		Actions within and adjacent to southern right whale BIAs and HCTS should demonstrate that it does not prevent any southern right whale from utilising the area or cause auditory impairment.	As a result of ~~implementation of~~ implementing shutdown or relocation procedures when a SRW enters the ~~suite of mitigation measures~~ 13 km ensonified area SRW are not ~~exposed~~ prevented from utilising the area nor subject to ~~sound levels that result in~~ auditory impairment ~~or displacement from BIAs or HCTS~~. Updated EPO with AS#4. Note, wording missing in G1. 13km based on rounding up of animat modelling for 140 dB behavioural range SRW "foraging" (reproduction), but not clear if/how this applies to migration BIA, noting migration animat for 140 dB is 18.4km. Assume that this is intended only in relation to reproduction behaviours. Uncertainty with model predictions.	Assessment of SRW in F3 includes Section 3.1.2. text that talks to behavioural disturbance and the recovery actions. In relation to meeting recovery plan obligations, it states '*To operationalise these principles, CGG will manage to an EPO whereby, ' No behavioural disturbance will occur to any SRW within the reproduction BIA as a result of the Regia MSS* '. ' This is not in G1, so further unclear what ther are using as EPOs Also, existing text re the precutionary principle under "Conservation Status' section include some unsubstantiated statements around scientific consensus on behavioural disturbance not resulting in population impacts is not appropriate or consistent with the issue raised in relation to SRW reproduction. **WE HAVE TO PUT TOGETHER THE PIECES FROM MULTIPLE APPENDICES, EVEN WITH APPENDICES THAT ARE INTENDED TO BE A STANDALONE DEMONSTRATION OF ACCEPTABLE LEVEL. Not a reason for refusal as multiple parts of the EP can still demonstrate meeting acceptance criteria, but note this issue for potential feedback to CGG. Missed opportunity for CGG to talk to whay they have applied precautionary approaches and why they are effective with specific refeence to defined acceptable levels, recovery actions, etc.**	As a result of implementation of the suite of mitigation measures, SRW are not exposed to sound levels that result in auditory impairment or displacement from BIAs or HCTS. Wording inconsistent with the EPO updated in Appendix E version. If updating one, update both. 'Displacement' no longer aligns with recovery action wording. Which one are they using? Compliance issue (as well as not clear demonstration of acceptable level or clear,unambiguous EPOs linked to acceptable levels. Note, G1 includes in another place an imcomplete EPO '*As a result of implementing shutdown or relocation procedures when a SRW enters the 13 km ensonified area...* ' Do we assume this is meant to be included when we have inconsistency throughout multiople locations in the EP?	**Inconsistencies remain in relation to EPOs in the EP (Appendices E, F3 and G1) and how these link to defined acceptable levels.** **For example, updates made by CGG to EPOs for SRW in Section 11 of Appendix E7 are not consistent with EPOs presented in Appendix G1, EPOs are incomplete, or an EPO proposed in Appendix F3 in relation to meeting SRW recovery plan obligations.** **EPOs also includes a range of ambigious terms such as "substantial behavioural disturbance" or terms such as "displaced" which have not been defined or are consistent with recovery plan obligations ('does not prevent utilisation'), noting the uncertainty of behavioural disturbance to reproduction behaviours that has been acknowledged in the EP.** **Therefore, EPOs are not clear or unambiguous, and it is not clear if CGG has selected EPOs appropriately linked to acceptable levels. NOPSEMA has to make assumptions about which EPOs are being proposed.**							
			Actions within and adjacent to southern right whale BIAs and HCTS should demonstrate that they minimise behavioural disturbance.		Actions within and adjacent to southern right whale BIAs and HCTS should demonstrate that it minimises behaviour disturbance.	As a result of the implementation of realtime monitoring and activity limitations, SRW are not exposed to sound levels that cause sustained behavioural disturbance within or adjacent to BIAs or HCTS. This wording was included in AS#3. "Sustained" behavioural disturbance not defined with the EPO, but the impact assessment at the time provided some context on 'sustained' (weeks, months, years) and repeated disturbance vs acute, short term disturbance from Southall et al 2021 so it was not raised in OMR#2, We went back in OMR#2 on the bigger issue of whether any disturbance from <140 dB is acceptable regardless of acute or sustained, given the sensitve life stage and uncertainty about how disturbance could impact utilisation for reproduction. Acute disturbances may not be acceptable either unless addressed in the impact assessment, but they're not. IA now acknowledges that there is uncertainty and even low severity responses may not be ok.			As a result of the implementation of realtime monitoring and activity limitations, SRW are not exposed to sound levels that cause substantial behavioural disturbance within or adjacent to BIAs or HCTS. Updated since Appendix E. Addition of the term 'substantial' in relation to behavioural disturbance. Has not been defined or qualified so not clear demonstration of why this is consistent with the recovery actions. Note that the recovery action mentions actions within or adjacent to BIAs and HCTS. Use of wording 'substantial behavioural disturbance within or adjacent to BIAs or HCTS' adds ambiguity.							
	Biological	Impacts and risks to biological features will be temporary / reversible, small scale, and/or low intensity environmental damage at population levels.	Sound exposure levels to low frequency cetaceans must be below PTS per pulse and PTS 24 hr SEL thresholds of 222 dB and 183 dB respectively. These are ok - intent is to manage the activity to prevent exposure to PTS, on basis that TTS and behavioural effects will be temporary and recoverable (excluding SRW and BW)	Discussion headings in EP, do not specifically align with these categories, but are relevant. As the rationale is not specific to each defined acceptable level, it is not always clear. Note, the structure and content was in AS#3, no updates have been made in AS#4 in response to/acknowledge changes. Note that defined acceptable levels linked specifically to thresholds (and corresponding EPOs linked directly to ranges based on uncertain modelling).	Sound exposure levels to low frequency cetaceans must be below PTS per pulse and PTS 24 hr SEL thresholds of 222 dB and 183 dB respectively.	As a result of shutting down the sound source if: - any pinniped or dolphin is observed within 500 metres, and (except for bow riding dolphins), - any whale is detected within 2km of the sound source for more than 12 hours,			As a result of shutting down the sound source if: - any pinniped or dolphin is observed within 500 metres, and (except for bow riding dolphins), - any whale is detected within 2km of the sound source							

			Sound exposure levels to high frequency cetaceans must be below PTS per pulse and PTS 24 hr SEL thresholds of 230 dB and 193 dB respectively.		Sound exposure levels to high frequency cetaceans must be below PTS per pulse and PTS 24 hr SEL thresholds of 230 dB and 193 dB respectively.	and - any low frequency cetacean is detected within 9km of the sound source			for more than 12 hours, and - any low frequency cetacean is detected within 9km of the sound source								
			Sound exposure levels to very high frequencey cetaceans must be below PTS per pulse and PTS 24 hr SEL thresholds of 202 dB and 159 dB respectively.		Sound exposure levels to very high frequencey cetaceans must be below PTS per pulse and PTS 24 hr SEL thresholds of 202 dB and 159 dB respectively.	Consider 2km for 'any whale' (based on PS2.1) vs 9km for LFC (based on 8.5km LFC PTS in SLR) in terms of clarity for implementation cetaceans will not be exposed to sound levels associated with auditory injury.			cetaceans will not be exposed to sound levels associated with auditory injury.								
			Sound exposure levels to otariid pinnipeds must be below PTS per pulse and PTS 24 hr SEL thresholds of 230 dB and 185 dB respectively.		Sound exposure levels to otariid pinnipeds must be below PTS per pulse and PTS 24 hr SEL thresholds of 230 dB and 185 dB respectively.	No death or injury to fauna, including listed threatened or migratory species, from the activity.			~~No death or injury to fauna, including listed threatened or migratory species, from the activity.~~ Deleted from earlier Appendix E version.								
			Sound exposure to any blue whale must be below the behavioural effect threshold of 160 dB SPL.		Deleted - Defined acceptable level and EPO above relating to displacmeent from foraging area replaces this.	Deleted - Defined acceptable level and EPO above relating to displacmeent from foraging area replaces this.			Deleted - Defined acceptable level and EPO above relating to displacmeent from foraging area replaces this.								
			Sound exposure levels to blue whales must be below a TTS per pulse and TTS 24 hr SEL thresholds of 216 dB and 168 dB respectively.		Sound exposure levels to blue whales must be below a TTS per pulse and TTS 24 hr SEL thresholds of 216 dB and 168 dB respectively.	As a result of implementing shutdown or relocation procedures if a blue whale is detected within the 5 km ensonified area, blue whales will not be exposed to physical injury from sound exposure. Uncertainty over model predictions			As a result of implementing shutdown or relocation procedures if a blue whale is detected within the 5 km ensonified area, blue whales will not be exposed to physical injury from sound exposure.								
			Sound exposure levels to southern right whales must be below a TTS per pulse and TTS 24 hr SEL thresholds of 216 dB and 168 dB respectively.		Sound exposure levels to southern right whales must be below a TTS per pulse and TTS 24 hr SEL thresholds of 216 dB and 168 dB respectively.	As a result of implementing shutdown or relocation procedures when a SRW is detected within the 4 km ensonified area, SRW will not be exposed to auditory impairment. Uncertainty over model predictions			No longer present - EPO above now addresses both utilisation and auditory impairment								
									Underwater sound emissions from the Regia MSS are empirically measured and validated through the sound source verification procedure to ensure they remain within levels that do not cause injury or unacceptable disturbance to Southern Right Whale. New EPO, not included previously. Not clear if this is duplication or intended to replace the EPO above, which had the term "substantial" in it. This EPO is otherwise ok, except is injury meant to be the same as auditory impairment? By defintion, in relation the the SRW RP, they are different. What is ' unacceptable disturbance', why not stick to RP terms?								
	Ecological	Impacts and risks to ecological features will be temporary / reversible, small scale, and/or low intensity damage to the overall health, diversity, or functioning of the ecosystem.	Exposure of marine mammals to impulsive sound will not result in population-level effects.		Exposure of marine mammals to impulsive sound will not result in population-level effects.	As a result of the implementing the suite of mitigation measures, marine mammals will not experience auditory injury or sustained behavioural disturbance affecting survival, reproduction, or population distribution.			As a result of the implementing the suite of mitigation measures, marine mammals will not experience auditory injury or sustained behavioural disturbance affecting survival, reproduction, or population distribution.								
	Economic	Affected persons will not be worse off because of the activity.	Industries, livelihoods, and ecosystem services remain viable, with no sustained financial or operational consequences resulting from changes in species behaviour, abundance, or access to resources.															
	Cultural	Impacts and risks to cultural features including cultural values, traditions, or practices, will be temporary / reversible, small scale, and/or low intensity.	Culturally important species, places, and practices can continue without disruption to their role, accessibility, or longterm viability.															
	Social	Measures have been adopted based on the consultation process to address relevant objections and claims of relevant persons.	People and communities can continue engaging with the natural environment, recreational activities, and heritage values without experiencing long-term or irreversible disruption.															
		The views of public have been considered in the impact and risk assessment																
	Company	Environmental impacts and risks are consistent with the CGG impact and risk assessment process such that for an impact or risk the effect/ consequence rating is medium or below.	As per general level															