

**BEFORE THE EPA
OMV GSB LIMITED APPLICATION FOR MARINE DISCHARGE CONSENT TO
DISCHARGE OFFSHORE PROCESSING DRAINAGE (HARMFUL SUBSTANCES
FROM DECK DRAINS)**

EEZ 100018

IN THE MATTER of the Exclusive Economic Zone and Continental Shelf
(Environmental Effects) Act 2012

AND

IN THE MATTER of a Decision-making Committee appointed to consider a
marine discharge consent application made by OMV
GSB Limited for the discharge of trace amounts of
harmful substances from deck drains in the Great South
Basin

**STATEMENT OF EVIDENCE OF DANIEL GOVIER FOR
OMV GSB LIMITED**

Environmental impact assessment

Dated: 3 July 2019

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EXECUTIVE SUMMARY

1. My evidence covers three main components in relation to OMV GSB Limited's (**OMV GSB**) application for discharge consent for the discharge of trace amounts of harmful substances from deck drains:
 - (a) An assessment of the marine discharge consent application;
 - (b) An assessment of the proposed marine discharge consent conditions; and
 - (c) An assessment of the project against the purpose of the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (**EEZ Act**) in drawing my conclusion.
2. In my view, the proposed discharge is consistent with the 'sustainable management' purpose in section 10 of the EEZ Act.
3. A detailed Environmental Risk Assessment (**ERA**) process was undertaken as part of the Impact Assessment (**IA**), and the risk to receptors, and the effects on the environment and existing interests from the activity were considered to be negligible.
4. For the reasons outlined in my evidence, and the evidence presented by OMV GSB's expert witnesses, I consider that, subject to the adoption of the proposed conditions, and the implementation of the management procedures and mitigation measures identified in the IA, any adverse effects associated with the activity will be negligible or *de minimis*.

INTRODUCTION

Qualifications and experience

5. My full name is Daniel Govier.
6. I have degrees in Bachelor of Science (Zoology), a Post-Graduate Diploma in Marine Science, and a Master of Science in Marine Science, all from University of Otago.
7. I am currently employed as the Asia-Pacific Technical Discipline Manager – Marine Science at SLR Consulting Limited (**SLR**), based in Nelson, and

have held that position since October 2014. SLR is an environmental consultancy that specialises in IAs, marine consent applications, marine discharge consent applications, and resource consent applications and the development and execution of marine environmental monitoring programmes.

8. Prior to joining SLR, I have held a number of relevant roles. I was the Managing Director at Environmental Offshore Services (2013-2014), specialising in IAs of the offshore marine environment around New Zealand for the oil and gas industry. Environmental Offshore Services was acquired by SLR in October 2014.
9. I was an environmental consultant at Resource and Environmental Management Ltd (2010-2013), where I prepared a number of IAs in New Zealand's offshore marine environment, during the transitional, provisional and fully enacted EEZ Act.
10. I was the Operations Manager at Challenger Scallop Enhancement Company (2009-2010). This role involved the management of the commercial dredge scallop fishery at the top of the South Island and scallop stock assessments.
11. I was a Marine Ecologist at the Cawthron Institute in Nelson (2006-2009). In this role I completed a number of Assessments of Environmental Effects and resource consent applications around the marine environment. In addition, I was involved in developing and executing a large number of ecological monitoring programmes in the marine environment, mainly around marine farms (both finfish and bivalve).
12. I was a Marine Ecologist at the Taranaki Regional Council (**TRC**) (2002-2006). During my time at the TRC, I led all the marine ecological monitoring programmes along the entire Taranaki coastline and further developed my experience and knowledge of the marine environment. Monitoring programmes were undertaken for all discharge related resource consents in the Coastal Marine Area (**CMA**) and formed part of the compliance monitoring of resource consents. I processed a number of resource consent applications within the CMA, produced officer's reports and developed conditions in accordance with the Resource Management Act 1991 (**RMA**). During my time at the TRC I was involved in all oil and gas related resource

consent applications, which included the consenting of the Pohokura Field and the Kupe Field.

13. In summary, I have prepared and processed numerous resource consent, marine consent and marine discharge consent applications throughout New Zealand's Exclusive Economic Zone (**EEZ**) and CMA. As a result, I have gained a very good understanding of the different regulatory regimes, and the sensitivities and status of the existing marine environment around New Zealand. This experience spans many regions where oil and gas activities have taken place as well as in regions where oil and gas exploration has not yet occurred.

Code of Conduct

14. I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2014 and that I have complied with it when preparing my evidence. Other than when I state that I am relying on the advice of another person, this evidence is entirely within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.
15. I confirm the contents of this evidence are true and correct to the best of my knowledge.

Abbreviations

16. I use the following abbreviations in my evidence:
- AOI – Areas of Interest;
 - CMA – Coastal Marine Area;
 - DMC – Decision-making Committee;
 - EAD Programme – Exploration and Appraisal Drilling Programme;
 - EEZ – Exclusive Economic Zone;
 - EEZ Act – Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012;
 - EPA – Environmental Protection Authority;
 - ERA – Environmental Risk Assessment;

- ESRP – Emergency Spill Response Plan;
- GSB – Great South Basin;
- HSNO – Hazardous Substances and New Organisms;
- IA – Impact Assessments;
- KIR – Key Issues Report;
- IUCN – International Union for Conservation of Nature;
- MNZ – Maritime New Zealand;
- MODU – Mobile Offshore Drilling Unit;
- OGS – Oil and Gas Solution Pty Ltd;
- OMV GSB – OMV GSB Limited;
- PEC – Predicted Environmental Concentration;
- PNEC – Predicted No Effects Concentration;
- RMA – Resource Management Act 1991; and
- SLR – SLR Consulting NZ Limited.

Role in marine consent application

17. SLR was engaged by OMV GSB to assist with the regulatory applications required under the EEZ Act and Maritime Transport Act 1994 to enable the commencement of its EAD Programme. This includes preparing the marine discharge consent application and IA that is the subject of this evidence.
18. I am Project Manager for the SLR Project Team and associated sub-consultants who were engaged to provide the relevant technical reports. I led the development and preparation of the IA and the ERA. Given this role, I have been asked to provide evidence about the IA, and the section 59, section 61 and section 10 considerations relevant to my expertise.

Scope of Evidence

19. In this brief of evidence, I will discuss:

- (a) An assessment of the marine discharge consent application covering:
 - (i) A summary of the application;
 - (ii) The decision-making framework set out in section 59 of the EEZ Act and the purpose of the EEZ Act (section 10);
 - (iii) My assessment of the application against the section 59 matters within my expertise; and
 - (iv) My assessment of the EPA Key Issues Report and other commissioned reports, and the submissions relevant to my expertise.
- (b) An assessment of the proposed marine consent conditions; and
- (c) An assessment of the project against the purpose of the EEZ Act in drawing my conclusion.

SUMMARY OF APPLICATION

- 20.** OMV GSB has applied for a marine discharge consent under section 38 of the EEZ Act. The application is to permit the discharge of trace amounts of harmful substances from the deck drains of a MODU associated with its EAD Programme.
- 21.** The EAD Programme includes the drilling of up to three exploration wells and seven appraisal wells within OMV GSB's Petroleum Exploration Permit (**PEP**) 50119. Drilling is anticipated to commence in 2020, and is likely to be completed as part of one or more drilling campaigns over the subsequent duration of PEP 50119, which could extend out to 2030.
- 22.** The proposed wells are located within the Great South Basin (**GSB**) and require a number of different approvals in accordance with the EEZ Act and Maritime Transport Act 1994. Risks not associated with deck drainage discharges, such as drilling in the EEZ, as well as the need for emergency response plans, will be addressed in separate applications and regulatory processes under other marine management regimes.

23. At the time of preparing this statement, the additional required applications have not been lodged with the EPA, Maritime New Zealand (**MNZ**), but I understand that these applications will be made in the near future.
24. The scope of the IA submitted in support of the marine discharge consent is confined to matters directly relevant to the activity for which consent is sought – the discharge of trace amounts of harmful substances from the deck drains of a MODU.
25. The potential discharge volumes during rain events, harmful substances dilution calculations and the likely zone of influence if a harmful substance discharge occurs is discussed in sections 3.5, 3.6 and 3.7 of the IA, and also in the evidence of **Mr Forrest**.
26. An AOI was developed which encapsulates the proposed well locations within PEP 50119. This AOI was identified to capture the potential effects from all of the proposed activities within the EAD Programme and the same AOI will be used in all of the marine consent applications. For this deck drainage discharge consent application, the AOI was used as the assessment area for assessing effects from potential discharges of trace amounts of harmful substances from the deck drains of a MODU on existing marine habitats and communities within the AOI. Surrounding areas were also considered to assess whether those receptors would be at risk from any potential discharge of trace amounts of harmful substances from the deck drains of a MODU associated with the EAD Programme.
27. An ERA was undertaken as part of the IA to identify the relative significance of potential effects from the discharge of trace amounts of harmful substances from the deck drains of a MODU. This assessment process was based on a consequence and likelihood approach. The methodology for the IA was adapted from NIWA's risk assessment framework for activities in New Zealand's EEZ and extended continental shelf¹ and the joint Australian & New Zealand International Standard Risk Management –

¹ MacDiarmid, A., Beaumont, J., Bostock, H., Bowden, D., Clark, M., Hadfield, M., Heath, P., Lamarche, G., Nodder, S., Orpin, A., Stevens, C., Thompson, D., Torres, L., Wysoczanski, R., 2012. 'Expert Risk Assessment of Activities in the New Zealand Exclusive Economic Zone and Extended Continental Shelf', prepared for the Ministry for the Environment, NIWA Client Report No: WLG2011-39, 139pp.

Guidelines, (ASNZS, ISO 3100:2018)². This is discussed in further detail in section 7 of the IA.

- 28.** The following factors were taken into account in the assessment of effects on the environment from the proposed discharge:
- (a) The MODU and operational procedures have been designed to minimise the potential for discharges of harmful substances via the deck drainage system through a number of measures such as secondary containment/bunding, shut off drains, alarms, etc. The mitigation measures in place on the MODU will ensure that the probability of a loss of containment of a harmful substance to deck is as low as reasonably practicable;
 - (b) If a loss of containment of harmful substance to deck occurs, there will only be trace amounts left on the deck following clean up procedures that will be in place as part of the Emergency Spill Response Plan (**ESRP**);
 - (c) Should any trace amounts of harmful substance make it into the deck drainage system, the concentrations of harmful substance within the product will be diluted in the settling tank. Upon discharge to the marine environment, the harmful substance would be further diluted;
 - (d) The discharge of trace amounts of harmful substances will be below the Predicted No Effects Concentration (**PNEC**) in the receiving water well within a 200 m zone of influence. This is a result of the low volume of harmful substance and the high energy offshore marine environment in the GSB; and
 - (e) The application is made on a prospective and precautionary basis in that any discharges of trace amounts of harmful substances from deck drainage to the marine environment will be accidental and at most intermittent (and may not ever occur).

² 'ISO 3100:2018, Australian & New Zealand International Standard Risk Management – Guidelines' International Organization for Standardization.

29. After working through the detailed ERA process, my team and I concluded that that the risk to receptors and the effects on the marine environment, existing interests and human health from the discharge of trace amounts of harmful substances from deck drainage is negligible.

DECISION MAKING FRAMEWORK

30. Unlike resource consent applications under the RMA, there is not yet a policy framework to guide decision-making under the EEZ Act.³ However, the DMC must consider the matters set out in section 59 of the Act. Section 59 is set out below for ease of reference. I have highlighted subsection (2A) which is of particular relevance to this application:

59 Marine consent authority's consideration of application

- (1) This section and sections 60 and 61 apply when a marine consent authority is considering an application for a marine consent and submissions on the application.
- (2) If the application relates to a section 20 activity (other than an activity referred to in section 20(2)(ba)), a marine consent authority must take into account –
 - (a) any effects on the environment or existing interests of allowing the activity, including –
 - (i) cumulative effects; and
 - (ii) effects that may occur in New Zealand or in the waters above or beyond the continental shelf beyond the outer limits of the exclusive economic zone; and
 - (b) the effects on the environment or existing interests of other activities undertaken in the area covered by the application or in its vicinity, including –
 - (i) the effects of activities that are not regulated under this Act; and
 - (ii) effects that may occur in New Zealand or in the waters above or beyond the continental shelf beyond the outer limits of the exclusive economic zone; and
 - (c) the effects on human health that may arise from effects on the environment; and
 - (d) the importance of protecting the biological diversity and integrity of marine species, ecosystems, and processes, and

³ For example, no National Policy Statements have been created for any activities in the EEZ.

- (e) the importance of protecting rare and vulnerable ecosystems and the habitats of threatened species; and
- (f) the economic benefit to New Zealand of allowing the application; and
- (g) the efficient use and development of natural resources; and
- (h) the nature and effect of other marine management regimes; and
- (i) best practice in relation to an industry or activity; and
- (j) the extent to which imposing conditions under section 63 might avoid, remedy, or mitigate the adverse effects of the activity; and
- (k) relevant regulations (other than EEZ policy statements); and
- (l) any other applicable law (other than EEZ policy statements); and
- (m) any other matter the marine consent authority considers relevant and reasonably necessary to determine the application.

(2A) If the application is for a marine discharge consent, the EPA must take into account –

- (a) the matters described in subsection (2), except paragraph (c); and**
- (b) the effects on human health of the discharge of harmful substances if consent is granted.**

(2B) If the application is for a marine dumping consent or relates to an activity referred to in section 20(2)(ba), the EPA must take into account –

- (a) the matters described in subsection (2), except paragraphs (c), (f), (g), and (i); and
- (b) the effects on human health of the dumping of waste or other matter, or the abandonment of the pipeline, if consent is granted; and
- (c) any alternative methods of disposal of the waste, other matter, or pipeline that could be used; and
- (d) whether there are practical opportunities to reuse, recycle, or treat the waste, other matter, or pipeline.

(3) The marine consent authority must have regards to –

- (aa) EEZ policy statements; and
- (a) any submissions made and evidence given in relation to the application; and
- (b) any advice, reports, or information sought under this Part and received in relation to the applications; and
- (c) any advice received from the Māori Advisory Committee.

- (4) When considering an application affected by section 74, the marine consent authority must also have regard to the value of the investment in the activity of the existing consent holder.
- (5) Despite subsection (3), the marine consent authority must not have regards to –
 - (a) trade competition or the effects of trade competition; or
 - (b) the effects on climate change of discharging greenhouse gases into the air; or
 - (c) any effects on a person’s existing interest if the person has given written approval to the proposed activity.
- (6) Subsection (5)(c) does not apply if the person has given written approval but the person withdraws the approval by giving written notice to the marine consent authority –
 - (a) before the date of the hearing, if there is one; or
 - (b) if there is no hearing, before the marine consent authority decides the application.

31. Section 60 contains further matters that the DMC must have regard to when considering the effects of an activity on existing interests under section 59(2)(a) above. Section 61 also prescribes information principles that the DMC is required to follow.

32. Section 10 is also a key consideration, being the purpose of the Act. It is set out below:

10 Purpose

- (1) The purpose of this Act is to promote the sustainable management of the natural resources of the exclusive economic zone and the continental shelf.
- (2) In this Act, sustainable management means managing the use, development, and protection of natural resources in a way, or at a rate, that enables people to provide for their economic well-being while—
 - (a) sustaining the potential of natural resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
 - (b) safeguarding the life-supporting capacity of the environment; and
 - (c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.
- (3) In order to achieve the purpose, decision-makers must—

- (a) take into account decision-making criteria specified in relation to particular decisions; and
- (b) apply the information principles to the development of regulations and the consideration of applications for marine consent.

33. The assessment that follows will step through the key relevant aspects of section 59 within my expertise, address the uncertainty and risk associated with the application, and section 10.

ASSESSMENT AGAINST SECTION 59 MATTERS

Section 59(2)(a) and (b) – Effects on the environment or existing interests

Effects on the environment

- 34.** The effects of the activity on the environment and existing interests are addressed comprehensively in Section 7 of the IA and I do not intend to repeat that here. Also, the important factors that influenced our assessment of the potential effects of the activity on the environment are set out in **paragraph 28** above. I also have read and rely on the evidence of **Mr Forrest, Mr Hollinger and Mr Selischi**.
- 35.** In my opinion, the potential effects on the environment, including effects in the waters above or beyond the continental shelf, from the proposed discharge will be negligible. This is essentially because the volume of any hazardous substances that could be discharged via the drainage system (if any) is very small (at an assumed maximum of 250 ml), and the dilution and dispersion of the substances would be immediate and rapid on entering the marine environment.
- 36.** As indicated in **paragraph 25**, **Mr Forrest's** evidence provides the background information on the dilution calculations that have been used for the discharge scenario in the IA and determining the zone of influence. A 200 m zone of influence was calculated for the discharge of harmful substances from the deck drainage system to dilute the full amount of the most ecotoxic harmful substance likely to be onboard the MODU down to the PNEC. This is based on the assumption that the entire amount of the harmful substance entered the water immediately (i.e. no dilution) and this is considered by Mr Forrest to be highly conservative. This approach and

calculations were also based on modelling of the discharge of produced water from the FPSO Raroa that has a daily discharge over 500 times greater than the predicted total daily rainfall discharge volume for the largest MODU in the recent tender process with the lowest calculated rainfall.⁴

37. Mr Forest's evidence presents the calculations that were used in the IA for the worst case scenario (i.e. least dilution, smallest tank size and most ecotoxic substance) and if a spill occurred and 250 mL of harmful substance entered the deck drainage system, and assuming that the entire 250 mL of harmful substance was discharged directly into the receiving water (i.e. no dilution within deck drainage system). Mr Forrest determined from his calculations in **paragraph 64** that under this scenario, the volume of water required to dilute the Predicted Environmental Concentration (**PEC**) of Cl-111 to below PNEC extends out from the MODU as a hemisphere with a 12 m radius.
38. In summary, my assessment based on the calculations of Mr Forest is that the risk of the activity on the environment is negligible. Not only is the risk negligible, but the potential effects of any discharge of trace amounts of harmful substances through the deck drainage, should it occur, would also be negligible.

Potential effects on existing interests

39. The existing activities that take place within the wider GSB have been identified as commercial fishing and maritime traffic and the closest boundary of the AOI is 24 km offshore from the CMA. However, these existing activities are dispersed over a wide area of the GSB, primarily inshore and are not confined to the AOI. The AOI lies within Fisheries Management Area 3, where deepwater commercial fishing effort targets the deepwater fisheries associated around the shelf edge. An assessment of the fishing effort undertaken within the AOI during 2014-2018 has reported approximately 52 fishing events over the five years where bottom trawling and set netting caught approximately 87,000 kg of fish.⁵

⁴ Forest statement of evidence, para 62.

⁵ Information provided by MPI in support of OMV's subsequent marine and discharge consent applications for the GSB EAD Programme.

40. New Zealand's 58 iwi hold shares in settlement quota in these deepwater fisheries. Te Ohu Kaimoana manages the quota for most of the iwi quota holders within the AOI. However, Ngāi Tahu Seafood manages their own fisheries assets as well as the fisheries settlement assets owned by Ngāi Tahu Fisheries Settlement Limited relevant to the AOI.
41. The IA concludes that the groups that have an existing interest within the AOI are The Deepwater Group (who represent the deepwater commercial fishers and quota holders), Te Ohu Kaimoana and Ngāi Tahu Seafoods.
42. With the exception of commercial fishing activity (section 4.5.2 of the IA), and as detailed in **paragraph 39** there are no other activities which occur within the AOI.
43. The cultural environment around the AOI is described in Section 4.4 of the IA, which identifies the relevant Papatipu Rūnanga that OMV GSB have engaged with.
44. Given the potential risk and associated effects on the receiving environment from a discharge of trace amounts of harmful substance from deck drainage onboard a MODU has been assessed as negligible through the ERA process, it is also my assessment that the potential effects on existing interests, which includes potential effects on commercial fishing activities, will also be negligible. This is supported by the fact that any such discharge would be rapidly diluted and any harmful substance would be below the PNEC beyond the 200 m zone of influence due to the dilution and mixing in the high-energy marine environment. This would result in no receptors being impacted, nor would any harmful substance reach the benthic environment or the coastline or any habitats or species that reside in these areas.
45. A 500 m Non-Interference Zone will also be in place around the MODU so no vessel undertaking fishing activity will be able to get closer than 500 m. Similarly the 2018-2019 New Zealand Nautical Almanac – Annual Notice to Mariners recommends under section 16, that when navigating in the vicinity of production platforms and exploration rigs, an adequate safe margin of distance should be allowed. Where there is sufficient sea room, vessels

should keep at least five nautical miles clear of these installations⁶. It is therefore my opinion that based on the limited amount of fishing activity throughout the AOI over the last five years, and the separation distances recommended in the New Zealand Nautical Almanac, any impact on commercial fishing activities and the associated existing interests from this discharge consent application are negligible.

Cumulative impacts

- 46.** Section 59(2)(a)(i) requires the DMC to take into account cumulative impacts. As part of the ERA process for assessing cumulative impacts I considered three groups of activities; other drilling activities relating to the EAD Programme, other activities within the AOI (such as fishing and maritime traffic) and other activities outside the AOI (land use and coastal discharges). There is the potential that up to 10 exploration and appraisal wells could be drilled within the AOI; however, these wells would be drilled over multiple drilling campaigns within the life of the discharge consent. These details were considered, along with the associated potential discharges of harmful substances within the cumulative impacts ERA discussed below.
- 47.** OMV GSB is the only operator able to drill within PEP 50119 so cumulative impacts from other operators are not a possibility. Given the conservative 200 m zone of influence identified, any actual physical effects from any harmful substance discharge would be spatially limited around the MODU. Not all of the well locations are confirmed yet as future appraisal drilling will depend on the success of the first exploration well (Tāwhaki-1), and this will be the only well drilled during the first campaign. However, OMV have advised me that if an appraisal well was to be drilled, no well would be closer than 3 km apart. Based on a 200 m zone of influence and a minimum 3 km separation distance between well locations, in addition to the temporal separation that will be present, there is no potential for any overlap of discharged harmful substances from deck drainage between well locations. Accordingly, I assess the potential for cumulative effects from the discharge to be negligible.

⁶ New Zealand Nautical Almanac (NZ 204) 2018-19. Annual NZ Notice to Mariners. Section 16 Oil Rigs and Gas Production Platforms. <https://www.lin.govt.nz/sea/nautical-information/new-zealand-nautical-almanac-nz-204/download-new-zealand-nautical-almanac-nz-204>

48. In addition, and as discussed throughout the IA (in particular Sections 3 and 7) and in Mr Hollinger's evidence, operational procedures and mitigation measures will be in place to prevent the discharge of trace amounts of harmful substances through the deck drainage to avoid any effects on the receiving environment or existing interests as far as practicable.

Section 59(2)(c) – Effects on human health that may arise from effects on the environment

49. As outlined within section 59(2A)(a), the EPA must take into account the matters in section 59(2), except (2)(c). Therefore, this subsection is not relevant to this application. However, assessment of the effects on human health of the discharge of harmful substances is required under section (2A)(b) and is discussed further in section 7.4 of the IA and in **paragraphs 82 to 86** below.

Section 59(2)(d) – Protection of biological diversity and integrity of marine species, ecosystems, and processes

50. The existing environment within and surrounding PEP 50119 is detailed within Section 4 of the IA. To further delineate this existing marine environment, the physical environment, biological environment and marine conservation and sensitive sites across the wider GSB were considered.
51. As part of the ERA process, the biological diversity and integrity of marine species, ecosystems for each of the different physical environments, biological environments, and marine conservation and sensitive sites were considered when the designations of consequence and likelihood were made using the ERA matrix. As described above, it is my assessment that any potential adverse effects from a discharge of harmful substance occurring from the deck drainage system onboard a MODU would be confined to the immediate area of each well location and will be temporary in nature. At the end of the ERA process, the overall assessment on the biological environment from the activities proposed in the marine discharge consent application concluded that the residual risk would be negligible and the effects are also negligible.

52. In addition, as soon as the MODU has demobilised from the drilling location, the risk of any potential effects from a discharge of harmful substance occurring from the deck drainage system will be removed from that location. Accordingly, in my view, the discharge consent application will not compromise the protection of biological diversity and integrity of marine systems, ecosystems, and processes.
53. The water depths within the AOI are deep and it is located a significant distance offshore, so this removes the activities, and potential risk away from a number of the more sensitive areas and where biological diversity, integrity of marine species, ecosystems, and processes are higher along the shallower coastal margins. The first exploration well (Tāwhaki-1) that is proposed for the EAD Programme is located in a water depth of 1,325 m and 146 km offshore, a significant distance away from these sensitive areas.
54. I consider that the location of the AOI, operational procedures, mitigation measures and proposed conditions will all contribute towards ensuring that biological diversity and the integrity of marine species, ecosystems and processes in the GSB are protected.

Section 59(2)(e) - Protection of rare and vulnerable ecosystems and the habitats of threatened species

55. As part of the IA, all potential rare and vulnerable ecosystems were considered and assessed, as were threatened species within and surrounding the AOI. The closest inshore boundary of the AOI is 46 km from the coast. As mentioned above, the first exploration well (Tāwhaki-1) is 146 km offshore and in 1,325 m of water.
56. Of the seabird species that could be present in the AOI (identified in section 4.2.8 of the IA) nine species are classified as *Vulnerable* on the International Union for Conservation of Nature (IUCN) Conservation Status⁷ threat status and four as *Endangered*. On the Conservation Status of New Zealand Birds⁸, these same bird species were classified as *Nationally Critical*, *Nationally Endangered* or *Nationally Vulnerable*.

⁷ www.redlist.org

⁸ Robertson, H.A., Baird, K., Dowding, J.E., Elliott, G.P., Hitchmough, R.A., Miskelly, C.M., McArthur, N., O'Donnell, C.F.J., Sagar, P.M., Scofield, P., Taylor, G.A., 2017. 'Conservation Status of New Zealand Birds, 2016'. New Zealand Threat Classification Series 19. Department of Conservation, Wellington, 23p.

57. The potential for seabirds to be exposed to a harmful substance discharge from the deck drains is reduced by the intermittent nature of the potential discharge. Similarly, given the significant dilution that occurs for any discharge from the deck drainage system both prior to entering the marine environment and upon entering the receiving environment, the harmful substance concentrations would be below the PNEC beyond the 200 m zone of influence. With the mixing and dilution that will take place of any trace amount of harmful substance discharge, any diving bird in the AOI or in close proximity to the MODU is unlikely to be exposed to high concentrations of harmful substances. As a result, it is in my opinion that the risk and associated effects to seabirds, including those classified as vulnerable or threatened on the international and national classification lists, from the discharge consent application would be negligible.
58. A total of 48 cetaceans (both toothed and baleen whales) have been recorded in New Zealand waters, of which 24 species are considered to have either a 'likely' or 'possible' presence in the AOI. These species are presented in Table 13 of the IA and their likelihood of occurrence in the AOI is identified. The threat classifications for each of these cetacean species are provided and the species are assigned classifications under the New Zealand Conservation Status⁹ and/or the IUCN Conservation Status. A summary of each of the cetacean species that could be in the AOI is provided in section 4.2.6 of the IA.
59. The densities of cetaceans are considered to be low within the AOI, and given the discharge of harmful substance would be at most intermittent, the probability of direct spatial and temporal overlap between marine mammals and any discharge would be very low. If such an overlap did occur, given the dilution that will occur upon discharge of the harmful substance, the concentrations of a harmful substance in the receiving environment would be below PNEC beyond a hemisphere with a radius of 12 m, as indicated in **paragraph 36** and in the evidence of Mr Forrest¹⁰. Ingestion is the primary route for cetaceans to be exposed to toxins, primarily through consumption of prey. However, given the potential discharge of any harmful substance (should it occur) is likely to be intermittent, and mixing and dilution would

⁹ Baker, C.S., Chilvers B.L., Childerhouse, S., Constantine, R., Currey, R., Mattlin, R., van Helden, A., Hitchmough, R., Rolfe, J., 2016. 'Conservation status of New Zealand marine mammals, 2013'. New Zealand Threat Classification Series 14. Department of Conservation, Wellington.

¹⁰ Mr Forrest statement of evidence, paragraph 65.

occur instantly, the potential for contamination of prey species is low, which reduces the potential for bioaccumulation impacts on cetaceans. As such, it is my opinion that the discharge to marine mammals from any discharge of trace amounts of harmful substance would be negligible.

- 60.** Schedule 6 of the EEZ Act – Permitted Activities 2013, describes 13 sensitive biogenic environments that could be present within the EEZ waters of New Zealand. These sensitive environments are all benthic habitats and if they were to be present within the AOI, they would be located in a water depth of approximately 1,300 m in the area of the proposed well locations within the EAD Programme, well below the discharge location of any possible trace amount of harmful substance from the deck drainage system. All the proposed well locations are located in in a high-energy marine environment, where large mixing and dilution would occur immediately following any discharge of harmful substance from the deck drainage system. A 200 m zone of influence was determined (section 3.7 of the IA) where the concentration of any harmful substance would be below PNEC in the receiving environment beyond that zone. As such, these sensitive environments are beyond this zone of influence from any harmful substance discharge.
- 61.** As a result, it is my opinion there are no benthic habits, benthic communities, sensitive environments, rare or vulnerable ecosystems, or habitats of threatened species within the AOI that would be impacted by the activities proposed within this Discharge Consent application.

Section 59(2)(g) – The efficient use and development of natural resources

- 62.** The IA does not specifically provide detail on the efficient use and development of natural resources due to the nature of the proposed discharge that is the subject of this consent application, and the small role the discharge plays in the broader EAD Programme.
- 63.** However, the EAD Programme has the purpose of establishing the presence or otherwise of hydrocarbons, or for determining the nature, location, or size of a hydrocarbon discovery. It is a necessary step towards potentially developing oil and gas resources that might exist in these areas.

Section 59(2)(h) – The nature and effect of other marine management regimes

- 64.** Section 7 of the EEZ Act defines a marine management regime as including *"the regulations, rules and polices made and the functions, duties, and powers conferred under an Act that applies to any 1 or more of the following: (a) territorial sea; (b) exclusive economic zone; (c) continental shelf."*
- 65.** Section 7(2) of the EEZ Act includes a list of other legislation that is incorporated into the broader definition of a marine management regime. Not all of the legislation listed in section 7(2) assists with avoiding, remedying or mitigating the adverse effects of the discharges associated with this activity.¹¹
- 66.** This application is for a defined activity that sits within the wider scope of the EAD Programme. The broader drilling programme will be subject to a number of other regulatory approvals, both in accordance with the EEZ Act and other regulatory regimes, as detailed within section 2.3 of the IA.
- 67.** As part of the EAD Programme, the activities that are not regulated under the EEZ Act, but are under other regulatory regimes, include the following:
- (a) Discharges to air and effects on air quality;
 - (b) Navigation safety and vessel movements;
 - (c) Vessel and MODU lighting;
 - (d) Seismic Survey code of conduct for minimising acoustic disturbance to marine mammals;
 - (e) Antifouling and biosecurity activities; and
 - (f) Operational health and safety matters.
- 68.** As part of the wider EAD Programme, there are an additional four government agencies that operate and administer marine management regimes that are relevant to the overall project. These are:
- (a) Department of Conservation – which is responsible for marine mammals and protected species within the Great South Basin;

¹¹ Such as the Continental Shelf Act 1964, the Fisheries Act 1996, the Marine and Coastal Area (Takutai Moana) Act 2011, the Marine Mammals Protection Act 1978 and the Wildlife Act 1953.

- (b) Maritime New Zealand – responsible for maritime rules for some discharges and oil spills;
- (c) Ministry for Primary Industries – responsible for managing fisheries within the EEZ and biosecurity at New Zealand's boundaries; and
- (d) WorkSafe New Zealand – responsible for administering legislation to provide a safe workplace.

69. OMV GSB has engaged with these regulators as part of the wider EAD Programme and will incorporate particular operational procedures and plans into the project development, to comply with the applicable legal requirements of the other marine management regimes. In addition, even though these other legislative requirements are not all of direct relevance to the discharge that is the subject of this consent application, they still provide various measures to avoid, remedy, or mitigate the adverse effects on the environment and existing interests for the wider EAD Programme.

70. On this basis, as provided above, there are other marine management regimes which require approvals and measures to be undertaken that will avoid, remedy and mitigate adverse effects from the wider EAD Programme. As a result, implementation of these additional measures and approval requirements provide further environmental protections and minimise potential for discharges to the deck and discharges to the environment.

Section 59(2)(i) – Best practice in relation to an industry or activity

71. Mr Hollinger and Mr Selischi have each described OMV GSB's operations and commitment to professional standards in their evidence. I also understand that OMV GSB has committed to undertaking activities within the EAD Programme in accordance with the "*Environmental Best Practice Guidelines for the Offshore Petroleum Industry*", produced by Ministry for the Environment.

72. Even though these guidelines were largely developed for production and development activities, I understand that OMV GSB will follow industry best

practice and will adhere to these guidelines as standard operating practice for the duration of the EAD Programme.

73. As such, I am satisfied that the activities in relation to this application, within the wider EAD Programme, will be undertaken in accordance with best practice.

Section 59(2)(j) – The extent to which imposing conditions might avoid, remedy or mitigate the adverse effects of the activity

74. A set of proposed conditions is included in **Appendix A** of the IA. In my view, the conditions will appropriately manage the potential effects and risk from the proposed activity.
75. The IA defines the operational procedures and measures that will be in place to avoid, remedy or mitigate any spill of harmful substance. The proposed conditions are clear that the activity can only take place in accordance with the application (i.e. the activities outlined in the IA). I consider that the operational procedures and measures identified in the IA will minimise the potential for a spill to occur. However, if a spill did occur the measures in place will further reduce any potential adverse effects on the marine environment.
76. Proposed conditions 8 and 9 reflect the requirements OMV GSB specified within the tender documents that the MODU operator must be able to achieve and comply with (i.e. deck drainage system). These measures will avoid or mitigate any adverse effects on the marine environment. The COSL Prospector has been contracted to undertake the drilling of the Tāwhaki-1 exploration well and as I understand from Mr Hollinger it has a deck drainage system that complies with this condition.
77. In accordance with the Exclusive Economic Zone and Continental Shelf (Environmental Effects – Discharge and Dumping) Regulations 2015, OMV GSB must prepare an ESRP. The ESRP is defined within the proposed Advice Note 1, and the implementation of the ESRP will further avoid or minimise the discharge of harmful substances from the deck drainage system.

78. I discuss the conditions further under the heading "Risk and Uncertainty" below in **paragraphs 88 to 96**. However, conditions 8 and 9 stipulate the minimum design requirements that any MODU contracted by OMV GSB must have in place, which through the operational procedures will result in minimising any potential adverse effects that this proposed discharge consent would have on the marine environment.

Section 59(2)(k) and (l) – Relevant regulations and other applicable law

79. Other statutory regimes which were considered as part of the ERA are summarised in Section 2.4 of the IA.
80. The IA identifies a number of statutes that are relevant to this activity, namely those listed in **paragraph 68**.
81. During the development of the IA, a number of other pieces of legislation and regulations were considered as part of the assessment (see section 2.4 of the IA); however, given the defined scope of the activity within the zone of influence, it was considered that these legal instruments did not provide any measures to avoid, remedy or mitigate any potential effects from the discharges associated with this application.

Section 59(2A)(b) – The effects on human health of the discharge of harmful substances if consent is granted

82. The potential pathways for any human health effects to occur from the activity are limited to direct exposure from any discharge of harmful substance, or from the consumption of fish caught that have been exposed to and contaminated by the discharge of a harmful substance.
83. The AOI is a significant distance from shore. The first exploration well to be drilled (Tāwhaki-1), which is indicative of the other wells in terms of distance and water depth, is 146 km offshore and in 1,325 m of water. The physical location of the proposed wells in terms of distance offshore and water depth will exclude any recreational fishing activities in close proximity to the MODU. The MODU will have a 500 m Non-Interference Zone in place for the duration of its time in New Zealand waters and as discussed in **paragraph 45** the New Zealand Nautical Almanac Notice to Mariners

recommends that five nautical miles is the minimum separation distance kept away from exploration MODUs.

- 84.** With the assessments that have been undertaken within the IA and further detailed within the evidence of Mr Forrest, a conservative 200 m zone of influence has been assumed for any potential discharge of harmful substance from the MODU. The five nautical mile clearance recommendation in the New Zealand Nautical Almanac is only a recommendation and not enforceable. However, the 500 m Non-Interference Zone is, so under worst case, no vessels can enter any closer to the MODU than 500 m, limiting the potential for any physical exposure to any discharged harmful substances.
- 85.** As such the potential for any impact on human health for direct exposure from any discharge given the immediate dilution that would occur of any trace amounts of harmful substance and the exclusion zones is negligible. Likewise, given the significant distance offshore and the large-scale mixing and dilution that will occur from any deck drainage discharge, any harmful substance discharged would not be detected at the shoreline or within the CMA (approximately 24 km inshore from the closest part of the AOI and approximately 124 km from Tāwhaki-1 well location).
- 86.** An assessment of the commercial fishing activity in the vicinity of the AOI is provided in Section 4.5.2 of the IA. Of the fisheries assessment that was undertaken for fishing activity in the AOI, of the 52 fishing events, all fishing methods were targeting fish based lower down in the water column (i.e. trawl and set net). The fishing activity within the AOI is most likely to have occurred within the shallower parts as the inshore parts of the AOI have water depths of 750 m compared to 1,325 m where the Tāwhaki-1 well is to be drilled. As such, given the 200 m zone of influence that was determined in the IA and detailed within the evidence of Mr Forrest, for any harmful substance discharged through the deck drainage system, concentrations will be below PNEC beyond 200 m from the discharge point, so there is a very low level risk of any commercially caught fish species being exposed to harmful substances that are at concentrations high enough to have any human health effects from the consumption of any fish species (i.e. above

PNEC). More specifically, the PNEC is likely to be within a hemisphere of water with a 12 m radius from the discharge location¹².

Section 59(3)(c) - Any effects on a person's existing interest if the person has given written approval to the proposed activity

87. OMV GSB undertook an engagement process with all existing interests (section 5 of the IA). No written approvals were provided for this activity.

RISK AND UNCERTAINTY

88. Under section 61(1), the DMC is required to base its decision on the best available information and to take into account any uncertainty and inadequacy in the information available. Under section 61(2), if the information available is uncertain, the DMC must favour caution and environmental protection.

89. In the IA three sources of potential uncertainty were identified, which include:

- (a) the location of all exploration and appraisal wells is not known;
- (b) the MODU has not been selected; and
- (c) the particular harmful substances are not known.

90. Since that IA was submitted, OMV GSB has contracted the COSL Prospector to undertake the drilling of the Tāwhaki-1 exploration well. As a result for the drilling location and drilling programme for the Tāwhaki-1 well, those questions around uncertainty have been answered.

91. As part of the IA, Mr Forrest conducted dilution calculations based on a hypothetical worst case scenario (i.e. smallest settlement tank size and most ecotoxic chemical likely to be onboard the COSL Prospector) and these calculations have been re-run based on the volume of the hazardous drain tank onboard the COSL Prospector and the most ecotoxic harmful substances that are anticipated to be on the MODU for the drilling of the first

¹² Reid Forrest statement of evidence paragraph 65.

well in the GSB EAD Programme (Tāwhaki-1). A comparison has been made between the calculations of the harmful substance discharges submitted with the IA and what will actually happen if the most ecotoxic chemical is spilt to deck onboard the COSL Prospector during the drilling of the Tāwhaki-1, and this is set out within the evidence of Mr Forrest. Using this worst case scenario with the COSL Prospector deck drainage system and the most ecotoxic harmful substance that will be onboard (Sodium Hypochlorite), with the same approach that was taken in the IA, the volume of water required to dilute the active ingredient within Sodium Hypochlorite down to its PNEC would equate to a hemisphere of water within a radius of 94 m from the point of discharge.¹³

- 92.** However, the Tāwhaki-1 is the first well to be drilled within the EAD Programme, and any additional wells will be drilled under a different drilling campaign which could have a different MODU. As a result, OMV GSB would then undergo a new tender process for a MODU should the drilling of Tāwhaki-1 be deemed commercially successful.
- 93.** The uncertainty for future wells will be mitigated by the tender process and the conditions that OMV GSB have proposed.
- 94.** As part of any MODU tender process going forward, I understand that OMV GSB will define strict environmental and operational requirements that any MODU suppliers must comply with. If this is not possible, these suppliers will not progress to the next stage in the contracting process. As such, OMV GSB expects that any MODU contracted will have a deck drainage system capable of processing the anticipated volumes of rainwater and deluge water during the EAD Programme.
- 95.** OMV GSB has proffered Condition 9 to reduce such uncertainty. This condition states:

All deck drain from hazard areas shall, as a minimum, include the following design requirements:

- (a) Full containment of deck drainage runoff directed to a settlement tank(s); and
- (b) Settlement tanks shall have a minimum combined capacity of at least 5 m cubic metres; and

¹³ Reid Forrest Statement of Evidence Paragraphs 70-91.

- (c) Any routine deck drainage runoff from hazard areas shall pass through an oil-in-water separator system prior to discharge to the sea.

96. I consider that the tender process OMV GSB will undertake for any future MODUs contracted to drill a well in the EAD Programme, where environmental and operational requirements have been included as part of the tender requirements, as well as proposed Condition 9 appropriately address the perceived uncertainty of OMV GSB not having contracted a MODU at this time for any wells drilled beyond Tāwhaki-1.

EPA COMMISSIONED REPORTS

97. I wish to briefly comment on the three reports prepared in relation to this application, being the EPA's Key Issues Report (**KIR**), Oil and Gas Solution Pty Ltd (**OGS**) Report and the Conditions Report.

98. The KIR identified two key issues that the DMC should consider as part of the decision making process. These are:

- (a) Uncertainty in the application arising from the specific MODU not being known at the time of lodging the application; and
- (b) The volumes of harmful substances that could be discharged to the marine environment.

99. The KIR noted that the uncertainty around the MODU has been mitigated by the commitments OMV GSB has made to reduce and mitigate the potential risk of any harmful substance discharge into the marine environment. These include minimum MODU standards and associated deck drain system design requirements, (section 3.2 of the IA and proffered conditions). The report further goes on to note that OMV GSB has committed to a number of standard operational procedures that control harmful substance handling and storage practices onboard any MODU. The KIR states that these commitments and procedures align with industry best practice and I agree with this summary.

- 100.** I agree with the summary in the KIR that although there may be uncertainty for future drilling programmes as the MODU or the harmful substances are not known, the systems and processes that are outlined in section 3.2 and 3.3 of the IA will be effective at reducing the risk of spills to deck of harmful substances and thereby adequately control the levels of harmful substances discharged from the deck drains of any MODU.
- 101.** The KIR concludes that the potential adverse environmental effects from this marine discharge consent application will be negligible, which is in agreement with the IA and my statement of evidence.
- 102.** The OGS report assessed the deck drain system, harmful substance storage and handling protocols and emergency response procedures and concluded that these align with industry best practice. It is concluded in the OGS report that the key risks to the application have been recognised, understood and addressed by OMV GSB as part of the Discharge Consent application. I agree with this OGS concluding statement, as this also aligns with the overall risk environmental assessment summary classification of negligible.
- 103.** The Conditions Report provides a good review of the proposed conditions that are included as Appendix A in the IA. As part of the review of the assessment of the proposed conditions, the Conditions Report concludes that the uncertainties have been adequately addressed within the OMV GSB IA, based on the OGS and KIR reports. I agree with this conclusion.
- 104.** There was one submission received on the application that provided five recommended conditions for inclusion to amend the proffered conditions. Further discussion on these conditions is provided in **paragraphs 115 to 118**. The Conditions Report considered each of these amendments but did not consider they were necessary for inclusion and I agree with these recommendations.
- 105.** I note that the Conditions Report recommends that a new Condition 12 be included which provides the EPA with the ability to review the conditions of consent and/or the duration of the consent in accordance with sections 76 and 77 of the EEZ Act. The ability for the EPA to review conditions under sections 76 and 77 of the EEZ Act should not be imposed as a numbered

condition on the consent. The reason for this is that it is only the EPA that can instigate a review and such reviews are therefore not a condition that a Consent Holder can (or must) comply with. Whilst the EPA has, in the past, included its ability to review such consents as a numbered condition, it is my understanding that the EPA now includes such wording at the end of the consent after the final condition – the recently issued marine consent for exploration drilling within the Taranaki Basin (EEZ200010) took this approach and I recommend the same approach be taken for this marine discharge consent.

RESPONSE TO SUBMISSIONS

- 106.** I have reviewed all the submissions in relation to the OMV GSB marine discharge consent application. Rather than addressing each submission individually I have considered them under a series of topics in the sub-headings below. For each of the different topics, the submissions have been summarised and my response is at the end of each sub-heading.

MODU is yet to be contracted and deck drainage system is unknown

- 107.** A number of submissions have raised concerns about the fact that the final deck drainage system is not known. I have discussed this matter in **paragraphs 88 to 96** above.
- 108.** The EPA commissioned OGS to assess the deck drainage system, harmful substance storage and handling protocols and emergency response procedures that OMV will implement during the EAD Programme. The OGS report concluded that these systems and procedures align with industry best practice as indicated in **paragraph 102** above.
- 109.** In addition, the KIR noted that the uncertainty around OMV GSB not yet having a MODU contracted at the time of submitting the application has been mitigated by the commitments OMV GSB has made to reduce and mitigate the potential risk of any harmful substance discharge into the marine environment as discussed in **paragraph 99**. The commitments OMV GSB has made for the term of the consent are reinforced by way of proffered consent conditions in Appendix A of the IA.

Harmful substances that will be stored on the MODU are unknown

- 110.** A number of submissions raised concerns that the harmful substances that would be stored or used on the MODU are unknown. Based on this, a number of submitters recommended that a decision on the application cannot be made without these details.
- 111.** As discussed in my evidence in **paragraphs 89** and **90**, the IA identified three sources of potential uncertainty of which unknown harmful substances was included. Mr Forrest's evidence provides comparisons of the worst case scenario presented in the IA and a further worst case scenario based on the COSL Prospector in his **paragraphs 68** to **88**, should a trace amount of harmful substance enter the deck drainage system. These calculations are based on the harmful substance sodium hypochlorite, which is commonly known as chlorine bleach and is used onboard the MODU for a number of purposes, but primarily it is used for the killing unwanted microorganisms in the drinking water and in the municipal water supplies. This substance has a primary role on the MODU of ensuring the health and wellbeing of all crew onboard and I understand that the only risk that this substance could enter the deck drainage system is if there was a loss of containment whilst moving it to or from the storage area.
- 112.** The EPA's KIR also identified that the list of harmful substances not known is an uncertainty; however, it was stated in the KIR that although there may be uncertainty for future drilling programmes with the list of harmful substances not known, the systems and processes that OMV GSB have identified within section 3.2 and 3.3 in the IA will be effective at reducing the risk of harmful substance spills to deck, which in turn adequately controls the levels of harmful substances discharges from the deck drains of any MODU that OMV GSB contract for the EAD Programme.
- 113.** The KIR conclusion on the potential adverse environmental effects from the marine discharge consent application are consistent with the IA, where any potential adverse effects would be negligible. The summary from the KIR is detailed further in **paragraphs 100** and **101** above.

Cumulative effects

114. I discussed possible cumulative effects at **paragraphs 46 to 48** above. As set out above, I consider the potential for any cumulative effects to occur to be negligible.

Consent conditions

115. Of the 266 submissions received, only two submissions were received that made any reference to conditions. These two submissions were addressed in the EPA Conditions Report as discussed in **paragraph 104** and I will not repeat another assessment of the proposed consent conditions in these submissions. I agree with the assessment and conclusions made in the EPA Conditions Report.

116. The EPA Conditions Report identified five additional conditions for inclusion into the OMV GSB suite of conditions, namely:

- (a) a lapse date if the consent is not given effect to;
- (b) notification of spills;
- (c) in the event of a spill liaise with EPA to determine whether monitoring and remediation is required;
- (d) review of consent conditions; and
- (e) an amendment to the conditions regarding the duty to inform all personnel involved in exercising the consent of the obligations on the consent holder to brief all personnel in undertaking any of the activities authorised.

117. As discussed in **paragraph** Error! Reference source not found., the proposed inclusion of the review period should not be included as a numbered condition due to the fact that the condition does not relate to something that OMV GSB can comply with. However, in my opinion, the remaining four conditions (a, b, c, and e) are a reasonable inclusion to the final set of conditions should the DMC grant this application.

118. The EPA Conditions Report concluded that, should the marine discharge consent application be granted, then the conditions, with the inclusions listed above (**paragraph 115**) are appropriate to ensure that any effects of the proposal are avoided, remedies or mitigated. I also agree with this conclusion of the EPA Conditions Report.

Biodiversity

119. A large number of submissions raised concerns around biodiversity, it was either specifically mentioned, by itself, or concerns around threats to biodiversity or a need to protect biodiversity were raised. A large number of submissions raised concerns around the marine environment which were also associated with biodiversity so I have addressed them all here as well. The concerns raised that had a common theme are listed below:

- (a) risks to wildlife;
- (b) threatened wildlife;
- (c) threatened marine species;
- (d) harm to the natural environment;
- (e) protected species;
- (f) species of conservation value; and
- (g) valued marine species.

120. In section 4 of the IA, an extensive summary was undertaken on the existing environment within the GSB, which included the physical environment, biological environment and sensitive environments, so that all of the surrounding receptors and potential sensitivities were known, for consideration and incorporation into the ERA process. This information on the existing environment was then incorporated into the ERA process in section 7 of the IA. This is further described **paragraphs 50 to 54** above in relation to protection of biological diversity and integrity of marine species, ecosystems and processes.

- 121.** Consideration throughout the IA was given to species that are rare, protected, threatened or of significant value, and this is discussed in my evidence at **paragraphs 55 to 61**.

Human health

- 122.** There were submissions which raised concerns over human health, and both human health and marine life along the coast line. I discuss my assessment of the potential effects on human health at **paragraphs 82 to 86** above. This discussion is also relevant to the concern regarding marine life along the coast line, which is located a significant distance inshore of the AOI and the proposed well locations (see distances in **paragraph 124**).

Effects on fisheries

- 123.** Concerns were raised about negative effects from the discharge consent application on fisheries. I have discussed potential effects on fisheries in **paragraphs 39 to 42 and 86** in relation to the marine discharge consent application and a fisheries assessment was undertaken to gain a further understanding of the fishing effort which takes place in the AOI. In addition, with the 200 m zone of influence, and concentrations expected to be below PNEC beyond this zone of influence, there is not expected to be any recreational fisheries influenced by any discharges should they occur, especially given the water depth of 1,325 m at the Tāwhaki-1 well location.

Ecotourism

- 124.** Submissions raised concerns over ecotourism and the impact the marine discharge consent application would have on this tourism industry. Ecotourism was not assessed as part of the application, as tourism operations in the Otago and Southland regions are limited to locations within the CMA.
- 125.** The AOI is located 24 km offshore from the CMA, and the Tāwhaki-1 exploration well is located 124 km offshore from the CMA. With a 200 m zone of influence, if any harmful substance discharge occurs from the deck drains, there is no possibility that the effects will reach the CMA. As a result,

in my view there will be no direct impact on any ecotourism operations in the Otago or Southland regions. And based on the assessments throughout the IA, and as discussed above throughout this evidence, particularly for marine biodiversity (**paragraphs 118 to 120**), no marine mammals or bird species which are predominately the focus of the ecotourism industry will be impacted from the marine discharge consent application, which could have indirect effects on ecotourism operations.

SECTION 10 MATTERS AND CONCLUSION

- 126.** When considering all aspects of the OMV GSB application, including the evidence presented by OMV GSB's expert witnesses, I consider that the granting of the marine discharge consent application, subject to the proposed conditions, will promote the sustainable management of natural resources and ensure that adverse effects on the environment, including effects on existing interests, are negligible or trivial.
- 127.** I consider that with the operational procedures and management framework that will be in place onboard the MODU, as defined with the bowtie diagram in the IA (Section 3.8), that the life-supporting capacity of the environment will be safe-guarded.
- 128.** In my assessment, the potential for the natural resource (being the marine environment) to meet the needs of future generations will not be compromised by the proposed discharge of trace amounts of harmful substances.



Daniel Govier

3 July 2019