

Memorandum

To: Sandra Balcombe, Acting Manager EEZ Applications

Copy to: Michelle Ward, Acting General Manager Climate, Land & Oceans
Doug Jones, Manager, Kaupapa Kura Taiao
Susan Smith, Manager, EEZ Compliance
Aroha Beck, General Counsel

From: Tim Roser, Senior Advisor, EEZ Applications

Date: 24 April 2020

Subject: Beach Energy Resources NZ (Holdings) Limited's Canterbury Basin EAD application for a notified marine discharge consent

Purpose

1. The purpose of this memorandum is to record the reasons for your decision to determine Beach Energy Resources NZ (Holdings) Limited's discharge consent application EEZ100019 as complete under section 40 of the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (EEZ Act).
2. This decision falls within your statutory delegation, as provided in the instrument of delegation from the Chief Executive of the EPA.¹

Recommendation

3. It is recommended that you:

a.	Agree that Beach Energy Resources NZ (Holdings) Limited's application for a marine discharge consent (EEZ100019) is determined as complete under section 40 of the EEZ Act.
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¹ Instrument of Delegation - Chief Executive to EPA Staff (06 March 2020):
http://epa/edrms/acc/1/md/edmd/2020_3_06_EEZ_Delegation_CE_to_staff.pdf

The Application

4. Beach Energy Resources NZ (Holdings) Limited (NZBN: 9429038240751) (“**Beach**”) lodged this application for marine discharge consent on 25 March 2020.
5. Under section 40 of the EEZ Act the EPA, must within 20 working days after receiving an application, determine if it is complete.
6. The date for determination of completeness for this application is 28 April 2020.

Project Description

4. Beach is proposing to drill one exploration well as part of the Canterbury Basin Exploration and Appraisal Drilling (EAD) Programme. Depending on the learnings and results from this well, Beach may pursue a wider work programme within Petroleum Exploration Permit (PEP) 38264 that could include up to 11 follow-up exploration or appraisal wells. Drilling is anticipated to commence in late 2020 and will be completed as part of one or more drilling campaigns, using either, or both, a semi-submersible Mobile Offshore Drilling Unit (MODU) or a drill ship MODU. It is possible that more than one MODU will be used over the duration of the EAD. An expiry date of 7 November 2029 is proposed in the application to allow for a potential extension of the PEP.
5. This application relates only to the discharge of trace amounts of harmful substances from the deck drains of any MODU used for this EAD, as offshore processing drainage. No other activities related to the EAD are the subject of this application.

Legislative Context

Section 20B restricted activities

7. Section 20B of the EEZ Act outlines restrictions on discharges of harmful substances into the sea or into or onto the seabed of the EEZ from structures. No person may discharge a harmful substance from a structure or from a submarine pipeline into the sea or onto the seabed of the EEZ unless the discharge is a permitted activity, is authorised by a marine consent, or is authorised by sections 21, 22, or 23 of the EEZ Act.
8. Beach Energy Resources NZ (Holdings) Limited’s application is for the discharge of harmful substances from offshore processing drainage from the deck drains of the MODU. This is restricted under section 20B of the EEZ Act.

Regulation 16(1) classification of the proposed activity

9. The proposed discharge of trace amounts of harmful substances from the deck drains of a selected MODU are regulated by regulation 16(1) of the Exclusive Economic Zone and Continental Shelf (Environmental Effects – Discharges and Dumping) Regulations 2015 (D&D Regs). Regulation 16(1) classifies this activity as discretionary.

Completeness assessment and notification requirements

10. Under section 38 of the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (EEZ Act), any person may apply to the EPA for a marine discharge consent to undertake a discretionary activity. The application must be made in the prescribed form, fully describe the proposal and include an impact assessment (IA) prepared in accordance with section 39 of the EEZ Act and requirements prescribed in regulations.
11. In addition to the matters required under section 39 of the EEZ Act, regulation 35 of the D&D Regs requires that the IA describes the effects of the activity on human health.
12. The EPA must return an application for a marine discharge consent as incomplete under section 43 of the EEZ Act if it considers that the application does not comply with section 38 (including because the impact assessment does not comply with section 39 or any requirements prescribed in regulations).
13. If the EPA is satisfied that an application for a publicly notifiable marine discharge consent is complete, it must give public notice of the application and serve a copy of the notice on those persons and groups listed under section 46(1)(b)(ii) of the EEZ Act within 20 working days.

Cross-boundary activity

14. The EPA does not consider that this application should be processed or heard with an application for a resource consent. The proposed activities and any associated effects, which relate to the discharge of trace amounts of harmful substances from the deck drains of a MODU, occur well beyond the 12 nautical mile limit of the coastal marine area boundary. There are no requirements for Beach to seek a resource consent in relation to this application.

EPA completeness assessment of Beach's marine discharge consent application

15. I have reviewed Beach's IA under section 40 of the Act to determine whether it complies with the criteria in section 38 of the EEZ Act.

Prescribed Form

16. The application for a marine discharge consent has been made in the prescribed form.

Fully describe the proposal

17. The application forms and IA (including its supporting technical reports in the appendices) fully describe Beach's proposal to discharge trace amounts of harmful substances from the deck drains of the MODU.

Impact Assessment

18. The IA addresses the matters listed in section 39 of the EEZ Act and regulation 35 of the D&D Regs. More details are outlined below.

Section 39(1)(a) EEZ Act: Describe the activity for which consent is sought

19. Section 3 of Beach's IA describes the activities for which a marine discharge consent is sought.
20. Section 3 outlines the scope of the activity that is the subject of this application for marine discharge consent, is limited to the discharge of trace amounts of harmful substances from the deck drains of a selected MODU (Offshore Processing Drainage).
21. Section 3 describes the proposed operations. One exploration well will be drilled, with up to 11 other exploration or appraisal wells being drilled depending on the outcome of exploration drilling.
22. A MODU is yet to be contracted. It is possible that two different types of MODU could be used over the duration of the EAD, a semi-submersible MODU, or a drill ship.
23. Section 3.2.2 of Beach's IA describes the general characteristics of a typical MODU deck drain layout and treatment system that reflects Beach's environmental and operational requirements for any MODU that it may contract for the EAD.
24. Areas of MODU deck will be classified as hazardous and non-hazardous.
25. No harmful substances will be stored or handled in non-hazardous areas, apart from helicopter refuelling in exceptional or emergency circumstances. Deck drain discharges from non-hazardous areas may be routed directly overboard.
26. Any run-off from hazardous areas will pass through an Oily Water Separator (OWS). An oil-in-water monitor will have an automated alarm which will initiate the cessation of discharges if the oil content of the deck drain discharge from the OWS exceeds 15 ppm. In the event of an exceedance of the 15 ppm threshold the contaminated discharge will be redirected back to the OWS for further separation.
27. As a MODU is yet to be contracted, the harmful substances that will be used for the EAD are unconfirmed. Beach states that wherever possible, the least harmful substance that is technically capable of performing the specific role will be selected.
28. Section 3.5 provides information on the potential deck drain discharge volumes which will largely depend on the type of MODU, and the level of rainfall during the EAD.
29. Section 3.4 outlines the most ecotoxic harmful substance likely to be stored or used on the MODU(s) and mentions examples of other products that might be involved in general operations. This example helps to highlight the worst case discharge scenario that could occur and that if any other substance was discharged it would result in lesser effects.
30. I consider that the description of the activities for which the marine discharge consent is sought (section 39(1)(a) EEZ Act) is in:

- a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
- b. sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

Section 39(1)(b) EEZ Act: Describe the current state of the area where it is proposed that the activity will be undertaken and the environment surrounding the area

31. PEP 38264 has a total area of almost 14,379.72 km². The application identifies two Impact Assessment Areas (IAA), Gondola and Wherry, whose combined area encompasses approximately 20% of the PEP 38264 area (see Figure 1 & Figure 2 below). All of the proposed wells would be drilled within the two IAAs, and the majority of deck drain discharges will also occur in this area.

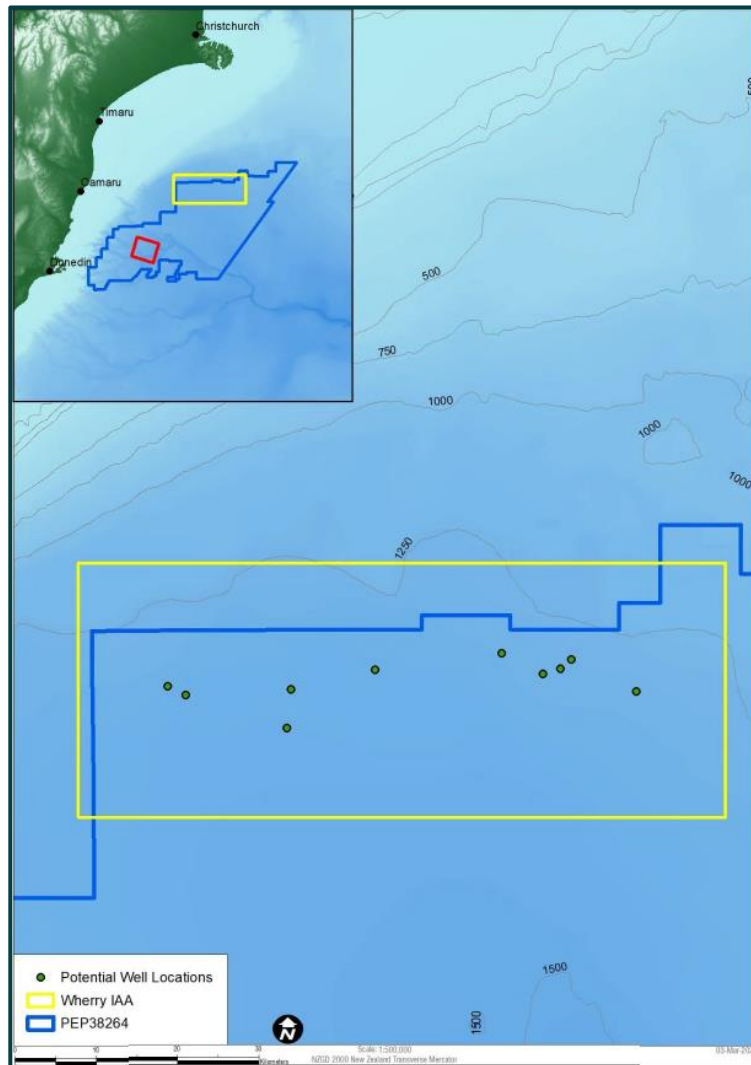


Figure 1: PEP 38264 and Wherry Impact Assessment Area.

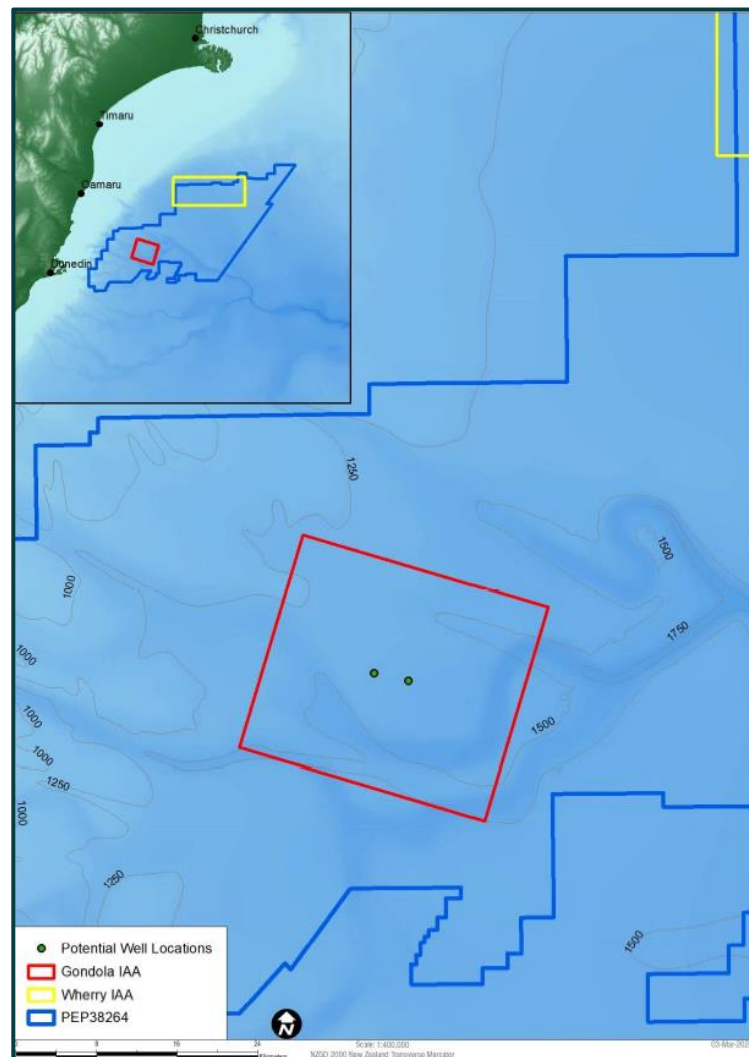


Figure 2: PEP 38264 and Gondola Impact Assessment Area.

32. Beach uses information from within the IAAs, and surrounds, as the basis for its description of the area where the proposed activity will be undertaken.
33. Section 4 of the IA describes the current state of the IAAs where the activity will be undertaken and the surrounding environment with respect to:
 - a. the physical environment (meteorology, waves and currents, thermoclines and sea temperature, water quality, bathymetry, geology and seabed substrate);
 - b. the biological environment (benthic invertebrates, cetaceans, pinnipeds, plankton and primary productivity, fish, cephalopods, marine reptiles and seabirds);
 - c. marine environment classifications (based on the Marine Environment Classification (MEC), a Geographical Information System approach for the classification of the New Zealand marine environment) and sensitive environments;
 - d. the cultural environment; and
 - e. the socioeconomic environment.
34. The IA describes the existing environment in the IAAs in a very broad and general sense.

35. Section 4.4 of the IA describes the cultural environment and provides a brief overview of Te Rūnanga o Ngāi Tahu Papatipu Rūnanga, regional management plans relevant to Ngāi Tahu and Ngāi Tahu Whānau as kaitiaki, statutory acknowledgement areas, Taonga species, customary and iwi fishing interests, and applications under the Marine and Coastal Area (Takutai Moana) Act 2011.
36. Section 4.5 of the IA describes the socioeconomic environment and provides a brief description of recreational and commercial fishing and shipping in the area.
37. I consider that the description of the current state of the area where Beach proposes to undertake the activity and the environment surrounding the area (section 39(1)(b) EEZ Act) is in:
 - a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
 - b. sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

Section 39(1)(c) EEZ Act: Identify the persons whose existing interests are likely to be adversely affected by the activity

38. Section 5 of the IA identifies activities and parties who may have existing interests in relation to the proposed discharges.
39. This identifies that the existing interests are deep water commercial fishers, customary fishers and associated quota holders.
40. Section 5.2 of the IA lists parties with existing interests that Beach have either engaged with, advised or requested to meet regarding the proposed discharges.
41. Section 5.1 gives a brief description of the manner of engagement with groups that Beach has identified as other Iwi and stakeholders. These groups include Iwi that Beach recognises as having special interests in the offshore area in the vicinity of the AOI, central government agencies, regional councils and fisheries groups.
42. I consider that Beach has made a reasonable effort (section 39(4)) to identify existing interests likely to be adversely affected by the activity (section 39(1)(c) EEZ Act) and that identification is in:
 - a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
 - b. sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

Section 39(1)(d) EEZ Act: Identify the effects of the activity on the environment and existing interests (including cumulative effects and effects that may occur in New Zealand or in the sea above or beyond the continental shelf beyond the outer limits of the EEZ)

43. Section 7 of the IA outlines the environmental, cultural, socioeconomic, cumulative effects, and human health risk assessment.
44. The risk assessment has been developed using the joint Australian & New Zealand International Standard Risk Management – Guidelines, (AS NZS ISO 31000:2018)(ISO 2018). The methodology has been adapted from the risk assessment framework from MacDiarmid et al (2012) with guidance from Clark et al (2017).
45. The risk assessment determines the level of risk to:
 - a. water quality;
 - b. sediment quality;
 - c. plankton & primary productivity
 - d. benthic invertebrates;
 - e. pelagic species (fish, cephalopods, cetaceans & pinnipeds)
 - f. seabirds
 - g. sensitive environments;
 - h. cultural environment;
 - i. recreational fishing;
 - j. commercial fishing;
 - k. cumulative effects; and
 - l. human health.
46. The key considerations on which the risk assessment in section 7 is based are:
 - a. the results of the calculations in section 3.6 of the IA;
 - b. the assumed 35 m zone of influence (an area outside of which no ecotoxic effects are expected to occur) around the point of discharge; and
 - c. the likely distributions of the environmental receptors.
47. As the exact harmful substances to be used on board are unconfirmed, the calculations in section 3 of the IA cover the likely range of discharge scenarios, and are based on the ecotoxic information for substances used by the COSL Prospector in other drilling activities.
48. I consider that the information provided regarding the effects of the activity on the environment and existing interests (including cumulative effects and effects that may occur in New Zealand or in the sea above or beyond the continental shelf beyond the outer limits of the EEZ) meets the requirements of making a reasonable effort (section 39(4)) to identify the effects of the activity (section 39(1)(d) EEZ Act), and the information is in:
 - a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests; (section 39(3)(a) EEZ Act); and
 - b. sufficient detail to enable the EPA and persons whose existing interests are or may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

Section 39(1)(e) EEZ Act: Identify the effects of the activity on the biological diversity and integrity of marine species, ecosystems, and processes

49. Section 7, in particular subsections 7.3.2, 7.3.3 and 7.3.4 of the IA, identify the effects on a range of different environmental receptors (listed in paragraph 45 above).
50. The results of the risk assessment for all of these receptors will provide information which could be used to help determine the effects on biological diversity, integrity of marine species, ecosystems and processes.
51. As outlined above, the risk assessment results for these organisms was largely based on the results of the harmful substance dilution calculation which is outlined in section 3.5 of the IA, the modelled zone of influence (35 m radius), and consideration of the likely distribution of the environmental receptors.
52. I consider that the information provided identifies the effects of the activity on the biological diversity and integrity of marine species, ecosystems, and processes, meets the requirements of making a reasonable effort (section 39(4)) to identify the information required by section 39(1)(e) of the EEZ Act, and the information is in:
 - a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests; (section 39(3)(a) EEZ Act); and
 - b. sufficient detail to enable the EPA and persons whose existing interests are or may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

Section 39(1)(f) EEZ Act: Identify the effects of the activity on rare and vulnerable ecosystems and habitats of threatened species

53. Section 4.3.2 of the IA contains information on protected species of fish.
54. Section 4.2.7 and 4.2.8 of the IA provides some detail on marine mammals species with the potential to occur in the AOI, and provides information on the New Zealand, and International Union for the Conservation of Nature (IUCN) conservation status of each species.
55. Information on the New Zealand, and the IUCN threat status for each species of bird with the potential to occur in the AOI is provided in section 4.2.9 of Beach's IA.
56. Section 4.3 of the IA contains lists of all the sensitive environments defined in the EEZ Act, and describes the likelihood of sensitive environments occurring in the AOI.
57. As noted earlier, the conclusions of the risk assessment (in section 7) are largely based on the results of the harmful substance dilution calculation which is outlined in section 3.5 of the IA, and the potential distribution of these environmental receptors.
58. I consider that Beach meets the requirements of making a reasonable effort (section 39(4)) to provide the information required by section 39(1)(f) of the EEZ Act in:
 - a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
 - b. sufficient detail to enable the EPA and persons whose existing interests are or may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

Section 39(1)(g) EEZ Act: Describe any consultation undertaken with persons described in paragraph (c) and specify those who have given written approval to the activity

59. Section 5 of the IA describes the stakeholder engagement process and includes the groups that Beach have engaged with, advised or sent a request to meet with. These included:
- a. iwi and hapū;
 - b. fisheries;
 - c. central government agencies; and
 - d. regional councils;
60. The engagement process for this application has been limited to certain key target groups based on Beach's assessment that the effects from the discharge will be limited to a very small area and are likely to be negligible.
61. I consider that Beach has made a reasonable effort to consult with affected and interested persons and I consider the description of any consultation undertaken with persons whose existing interests are likely to be adversely affected by the activity (section 39(1)(g) EEZ Act) is in:
- a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
 - b. sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

Section 39(1)(h) EEZ Act: Include copies of any written approvals to the activity

62. No written approvals were obtained or included in the IA at the time of lodgement.

Section 39(1)(i) EEZ Act: Specify any possible alternative locations for, or methods for undertaking, the activity that may avoid, remedy, or mitigate any adverse effects

63. Section 7.5 of Beach's IA describes their assessment of alternative approaches to discharges, which is to collect all of the deck drainage and to transport it onshore to be disposed of. The IA also lists the disadvantages of this approach.
64. I consider the information provided on possible alternative locations, or methods for undertaking the activity that would avoid, remedy or mitigate the adverse effects (section 39(1)(i) EEZ Act) is in:
- a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
 - b. sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

Section 39(1)(j) EEZ Act: Specify the measures that could be taken to avoid, remedy, or mitigate the adverse effects identified (including measures that the applicant intends to take)

65. The IA has listed a number of measures that will avoid, remedy or mitigate the adverse effects identified.
66. Section 3.3 of the IA outlines the systems and procedures that will be put in place to reduce risks. These include training for staff, maintenance and the use of spill kits. Section 3.3 also describes the physical barriers that are present on a typical MODU. These include bunding, the creation of a hazard area (where harmful substances can be used and stored), and a non-hazard area (where harmful substances are not permitted).
67. The IA states that Beach intends to select the least hazardous substances necessary to complete the job. Beach have also stated they will fully comply with the requirements of the Hazardous Substance and New Organisms Act 1996 (HSNO) and Health and Safety at Work Act 2015 (HSWA).
68. The IA describes the requirements to have an Emergency Spill Response Plan (ESRP) for the MODU which must be approved by the EPA under the D&D Regs which includes the Safety Data Sheet (SDS) for all harmful substances. SDS's contain information about the substance including information about their ecotoxicity and environmental fate, as well as information about storage and handling.
69. Section 8 of the IA outlines the proffered conditions that Beach have suggested could apply should the marine discharge consent be granted, so that the potential effects of the activity are appropriately avoided, remedied, or mitigated.
70. Section 39(5) of the EEZ Act requires the measures that must be specified under section 39(1)(j) include any measure required by another marine management regime and any measures required by Health and Safety at Work Act 2015.
71. Section 2.4 of the IA specifies the measures required by the following marine management regimes that Beach suggest may avoid, remedy, or mitigate adverse effects of the activities on the environment or existing interests:
 - a. Health and Safety at Work Act (2015);
 - b. Hazardous Substances and New Organisms Act (1996);
 - c. Resource Management Act (1991);
 - d. Crown Minerals Act 1991;
 - e. Maritime Transport Act 1994;
 - f. Biosecurity Act 1993; and
 - g. Marine Protection Rule: Part 131.
72. I consider that Beach has provided information required by section 39(1)(j) and section 39(5) of the EEZ Act in:
 - a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and

- b. Sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

Section 39(2)(a) EEZ Act: Description of effects of the activity on human health

- 73. Section 39(2)(a) of the EEZ Act and regulation 35 of the D&D Regs require that an impact assessment for a marine discharge consent must include a description of the effects of the activity on human health.
- 74. Section 7.3.8 of the IA provides information about the impacts on human health. The risk assessment considers the risks from direct exposure and from the consumption of fish.
- 75. I consider Beach has provided the information required by section 39(2)(a) of the EEZ Act and regulation 35 of the D&D Regs in:
 - a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
 - b. Sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

Conclusion

- 76. I have assessed the IA against all the criteria in section 39 (IA) of the EEZ Act and regulation 35 of the D&D Regulations. I conclude that Beach Energy Resources NZ (Holdings) Limited's application for a marine discharge consent, referenced as EEZ100019 complies with section 38 of the EEZ Act.
- 77. I observe that for all matters outlined in section 39 of the EEZ Act and regulation 35 of the D&D Regulations, the application contains information that is in;
 - a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
 - b. sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).
- 78. I also consider Beach Energy Resources NZ (Holdings) Limited has made a reasonable effort to identify the matters described in section 39(1)(c) to (f) and section 39(2) pursuant to section 39(4).

Recommendation

79. Having considered the above reasons within this memorandum, it is recommended that Beach Energy Resources NZ (Holdings) Limited's application for a discharge consent, including its accompanying IA compliant with section 38 of the EEZ Act, be determined as complete under section 40 of the EEZ Act.

Decision

80. That you:

a.	Agree that Beach Energy Resources NZ (Holdings) Limited's application for marine discharge consent (EEZ100019) is determined as complete under section 40 of the EEZ Act.	<input checked="" type="radio"/> Yes / No
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Sandra Balcombe

Date: 24 April 2020

**Acting Manager, Land and Oceans Applications
Regulatory Systems and Operational Policy**