



7 July 2020

Sandra Balcombe
Environmental Protection Agency
Private Bag 63002
WELLINGTON

Dear Sandra

Request for advice under section 56 of the EEZ Act regarding a notified marine discharge consent application by Beach Energy Resources NZ (Holdings) Ltd – EEZ100019 (Canterbury Basin)

Thank you for your letter of 8 June 2020 requesting advice and information to help the EPA-appointed Decision Making Committee understand the above application.

Following is Fisheries New Zealand's response to your three questions:

- (i) *Please confirm Beach Energy's presentation of fishing events in the areas of interest between 2014 and 2019, as detailed in Table 16 (page 93 of its Impact Assessment), is accurate.*

Beach Energy's presentation of fishing events in the areas of interest is accurate. This information was provided to Beach Energy Resources as an Official Information Act request (OIA20-0009) by Fisheries New Zealand. Beach Energy's report correctly notes that only fishing events that were reported by latitude and longitude are included in the analysis so some events are not included in the table. The number of events and their associated greenweights that are not included in the analysis are likely to be very low.

A minor data limitation that is not noted in the report:

- the greenweights reported in Table 16 are estimated by the fisher at the time of fishing and not necessarily weighed; however the fishers' estimates are very likely to be accurate enough for the purposes of characterising fishing activity in the area of interest.

A minor inaccuracy in the report:

- The column headed 'Greenweight Bycatch species' would more accurately be described as non-target species. Greenweights for these non-target species were calculated by removing target species greenweight from the overall catch greenweight as bycatch weight is not directly reported. Most of the non-target species listed in Footnote 8 are QMS species so must be landed; non-QMS species that do not need to be landed include broadnose seven gill shark and rattails.

- (ii) *Please comment on whether you agree with Beach Energy's assessment that the effects on commercial fishing interests will be negligible (section 7.3.6.2 of the Impact Assessment).*

We agree with Beach Energy Resources' assessment that the effects on commercial fishing interests will be negligible. We have reached this conclusion based on the following:

- The total estimated catch of target and non-target fish within the entire IAAs is relatively small - approximately 12 tonnes per annum over the last five fishing years;
- Because the non-interference zone around each MODU (Mobile Offshore Drilling Unit) where fishing may not occur is only 500m, the major part of each IAA (Impact Assessment Area) would still be available for fishing.

The Gondola IAA lies north of Moeraki Canyon in depths >1250m with most of the IAA being 1,300- 1,740m. Up to two wells will be drilled at the Gondola prospect, which would equate to a maximum of 15.7 km² or 2.6% of the approximate 600 km², area of the IAA.

The Wherry IAA lies in depths of 1,200- 1450m. The wells would all be sunk in depths >1,250m. Since up to 10 wells will be drilled at Wherry, 78.5 km² would be unavailable for fishing; this is 3.2% of the approximate 2,400 km² area of the IAA.

These estimates of the areas where fishing would be precluded are theoretical maximums; in reality Beach Resources would only be operating one MODU across both IAAs at a time.

- Beach Energy Resources suggest that commercial fishing is unlikely to be adversely affected by the potential discharge of harmful substances, since fish and invertebrates would be unlikely to remain within 35m of the point of discharge for more than 48 hours.¹

This claim seems reasonable for pelagic species such as southern blue fin tuna which move transiently through an area, as well as demersal (silver warehou) and benthic species (flatfish) since very small volumes of harmful substances would be rapidly diluted throughout the water column.

Although some fish species may temporarily aggregate around the MODUs for foraging, the LC₅₀ is higher (0.032mg/l) and longer (72 hours) for fish; on balance the likelihood of that concentration of harmful substance persisting, and individual fish remaining, within the discharge area for 72 hours seems remote.

For sessile invertebrates even directly underneath the MODUs, the harmful substance would pass through >1,200 m of water before reaching their habitat. Beach Resources note that non-soluble harmful substances denser than water are

¹ The applicants note that forty-eight hours is the exposure time for invertebrate EC₅₀ for concentrations of 0.026 mg/l sodium hypochlorite – the likely concentration of the most ecotoxic substance that could be accidentally discharged from the MODUs. The LC₅₀ (concentration of sodium hypochlorite required to kill half the members of a population) is higher (0.032mg/l) and longer (72 hours) for fish.

likely to be captured by the settlement tank of the deck drainage system, to be safely disposed of on land, so no effects on benthic invertebrates are expected.

- We don't consider there to be significant food safety risks if the hypochlorite did end up in the vicinity of any shellfish or fish subsequently caught and consumed. Although we don't have any data specifically on the behaviour of hypochlorite in fish, research looking at the formation of chlorine by-products in chicken carcass subject to different rinses² may be useful. At rinse levels of 50 mg/L (which is in the ball park for the marine discharge concentration) the corresponding exposure for consumers was deemed well within tolerable levels from the final chicken meat. On top of this cooking is believed to have a significant effect on reducing levels of chlorine by-products in the final food.

The consent impacts only a small radius for a relatively short time, and finfish would likely rapidly move out of the area in those chlorine levels, therefore the risk of fish getting contaminated is low, and the probability of these fish then getting caught is also low. Shellfish collection is also unlikely in the vicinity of the operation. Consequently overall we see the risk for food safety as being negligible.

- (iii) *Please specify any measures you consider are reasonably necessary to avoid, remedy, or mitigate any adverse effects of the proposed activities on commercial fishers.*

In our opinion, no additional measures to avoid, remedy or mitigate any adverse effects from the proposed activities on commercial fishers are required.

If you have any further questions please contact Robert Tinkler, Senior Fisheries Analyst on 03 211 1968 or via email at Robert.Tinkler2@mpi.govt.nz

Yours Sincerely



Arthur Hore
Acting Director
Fisheries Management

² <https://www.mpi.govt.nz/dmsdocument/22381-chlorinated-compounds-in-chicken-meat>