

**BEFORE THE BOARD OF INQUIRY
TAMARIND DEVELOPMENT DRILLING APPLICATIONS**

EEZ100016

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

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AND

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IN THE MATTER of a Board of Inquiry appointed under
s52 of the Exclusive Economic Zone and
Continental Shelf (Environmental
Effects) Act 2012 to decide on Tamarind
Taranaki Limited's marine consent and
marine discharge consent applications

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Held in the Blenheim Room at the Quality Hotel Plymouth
International (on the corner of Courtenay and
Leach Streets), New Plymouth, commencing Tuesday
6 November 2018 at 1pm

25

Board Committee Members:

Mr David Hill (Chair)

Ms Glenice Paine

Dr Dan McClary

30

TRANSCRIPT OF PROCEEDINGS

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I N D E X

DAY 1 (6 November 2018)

5	Preliminary Comments.....	3
	Opening Statement by the Chair.....	4
10	Introductions.....	8
	Opening Submissions by Ms Wallace.....	10
	Ms Wallace questioned by Board Committee Members.....	13
15	Ms Wallace Questioned by Legal Advisor.....	21
	JASON PEACOCK	
	Evidence.....	23
20	Questioned by Board Committee Members.....	25
	Questioned by Legal Advisor.....	30
	IAIN McCALLUM	
	Evidence.....	41
25	Questioned by Board Committee Members.....	42
	Questioned by Legal Advisor.....	48
	Re-examined by Ms Wallace.....	58

1.00 p.m. Mihi Whakatau - Haydn Te Ruki
(Ngati Te Whiti)

(Hearing adjourned from 1.17 p.m. until 1.33 p.m.)

5

WELCOME BY THE CHAIR

CHAIR: Good afternoon everybody and welcome to the first day
of the hearing on the applications for marine consent
10 for Tamarind Taranaki Limited for the drilling of up to
five side track development wells from three, as we now
understand it, of its existing wells in the Tui Field,
and including the associated logistical and
environmental monitoring activities. Tamarind has also
15 applied for a marine discharge consent to discharge
offshore processing drainage from deck drains aboard a
drill rig. No other consents are before us.

I'm reading from a prepared statement from fear I
might actually forget something.

20 I'm David Hill, Chair of this Board of Inquiry.
Sitting to my right, Glenice Paine and to my left,
Dan McCallum. We have in support with us two EPA staff
members, Tuf Ioane and Christina Smits, who can assist
with any procedural matters that anybody might have, and
25 gratefully I'll hand over to Tuf to do a health and
safety briefing.

HEALTH AND SAFETY BRIEFING

30 **MS IOANE:** Good afternoon, my name is Tuf Ioane. As David
already said, I am the hearing manager for this hearing.
I'm just going to run through a few of the health and
safety points before we start.

Please ensure you have all signed the attendance
35 register just outside the door. This is on the table as

you come in. Please turn off all your cellphones. Please note that these proceedings are being recorded so please speak into the microphone when it is your turn to speak. In the unlikely event of an emergency, a siren
5 or bells will sound continuously. Please leave the venue immediately by the nearest exit, assemble around the front by the front entrance of the hotel, that's the assembly point. In the event of an earthquake, drop, cover and hold, get under a table and wait for further
10 instructions. And the public toilets, if you go out there and just walk past the restaurant, it's just on your right down by a little hallway. Thank you.

CHAIR: Thank you Tuf.

15

OPENING COMMENTS BY THE CHAIR

CHAIR: It's important to note that we are an independent Board of Inquiry appointed by the Minister for the Environment, the Honourable David Parker, to consider
20 and decide these applications for marine consent and marine discharge consent by Tamarind. In addition we have delegated authority from the EPA's Chief Executive to determine the marine discharge consent, which would otherwise be decided by the EPA. We're required to make
25 a decision, produce the written report, and send that to the EPA for public release no later than nine months after the date the application was publically notified, which was on the 4th of May this year, so that decision is due late February. It is also important to note that
30 while the EPA would be responsible for oversight of any consents if granted, its role with respect to this Board of Inquiry is limited by statute to an administrative support and advice role. It has no role in terms of the decision that we must make.

Declaration of the interests of members of the Board of Inquiry are listed in the Interest Register which is available on the EPA website, and for the record I note that no members of the Board have any substantive
5 conflicts of interest.

This hearing, as we all know, is open to the public, representatives of the media can attend and report on the proceedings in accordance with Inquiry Procedures. No voice or video recordings may be made without the
10 Board's express approval. You should be aware that Radio New Zealand has sought permission to photograph and record part of the hearing and the Board has agreed to that, subject to the standard protocols.

There is a copy of all materials before the Board
15 available in the hearing room and if you need to review any documents please ask Tuf or Christina. All the documents are also available on the EPA website.

The hearing is being recorded for transcription, as you've just heard. A full transcript of each day's
20 hearing will be placed on the EPA's website by the afternoon of the following day, and for that purpose please remember to speak clearly and into the microphone.

I would like to thank all parties and submitters for
25 their respective contributions to the process so far. The Board has read all of the background application material, thank you very much, submissions and evidence by all parties to the applications.

All evidence and submissions will be taken as read.
30 We expect presenters not to spend a lot of time repeating that material, or reiterating their views in detail, but to outline a summary of key points and relief sought. We may impose a time limit to avoid unnecessary repetition.

The overall purpose of the hearing is to ensure the Board in making its decision on the application is informed by the best available relevant information and evidence on the activities for which consents are sought. We therefore expect the hearing to focus on the substantive issues before us.

It is really important that everyone understands the Board comes with an open mind. We have formed no view on the outcome, and to that end we will ensure that a fair process is followed. All participants, applicants and submitters alike, will be given an opportunity to explain their position on the application and the outcome they want from the process, to the extent those are relevant to our inquiry. The hearing inquiry procedures provide for remote video presentation, and we will be Skyping in a couple of people in the course of the proceedings.

Just a couple of technical issues. As most of you are aware, "the effects on climate change of discharging greenhouse gases into the air" is one of the three matters that section 59(5) of the EEZ Act explicitly prevents us from having regard to. While many submissions and submitters raise that concern, we simply cannot take any notice of that matter. That of course does not apply to the effects of climate change on the activities subject to an application if relevant, but we note that we're only considering a five year consent duration horizon, with the estimated activity drilling completion time of between four and nine months.

Secondly, no person may question a party or witness unless the Board gives permission. The general order of questioning of expert witnesses will be the Board and any submitter who has submitted questions, and none have been received to date, then Mr Allen, whose role I will explain shortly, and then the applicant counsel.

Only the Board and Mr Allen may question submitters. If matters arise during the proceedings that submitters have questions about, please either keep those questions for when you appear before us, or write those down and give those to Christina in the next available break for us to consider. Please don't shout out during proceedings and I'll remind everybody it's not a general public meeting.

The hearing schedule will be available each day and we encourage you to check it for changes to the schedule. If any presenter has a question about the hearing process or procedures or a problem with the schedule, please talk to Christina.

I expect the hearing to be conducted in a measured and constructive manner and that all participants will treat and are to be treated with courtesy and respect at all times.

With respect to Mr Allen, the Board has appointed Buddle Findlay as legal advisors assisting the Board. Mr David Allen, a partner at Buddle Findlay, will support the Board during the hearing by answering any legal questions raised by the Board, calling the Board's experts to give evidence, and asking questions of the experts. Mr Allen's role is to assist the Board in identifying and addressing issues he considers relevant and of assistance to the Board. He will not advocate for any particular outcome nor for any party.

With respect to conditions, while the Board has no preconceived outcome in mind we will be discussing conditions throughout the hearing because we need to understand how relevant identified effects could or may be managed if consent is granted. That's a perfectly normal part of consent proceedings. It should not be taken as any indication of our eventual decision. To that end we invite submitters to comment on any draft

conditions imposed during the hearing, and depending on what we hear we may direct conferencing on those conditions in due course, and that may involve submitters if that is requested.

5 Right, I now invite everyone present to introduce themselves and perhaps Ms Wallace, we could begin with you and your people.

MS WALLACE: Thank you, sir. So, my name is Lauren Wallace, I'm a partner at Govett Quilliam and I, together with
10 Rebecca Eaton, are legal counsel for the applicant.
Would you like me to introduce the rest of the team?

CHAIR: Or we can just go round the room. It's a very small room.

MR PEACOCK: My name is Jason Peacock. I'm the Country
15 Manager for Tamarind Resources.

MR McCALLUM: My name is Iain McCallum, I'm the Drilling
Manager for Tamarind Resources.

DR KING: My name is Brian King. I'm the oil drill expert
engaged by Tamarind for this process.

20 **DR LANE:** Alison Lane from ERM.

DR DE LUCA: Sharon De Luca, Boffa Miskell, marine ecology
for Tamarind.

DR CHILDHOUSE: Good afternoon, Simon Childhouse, Blue
Planet Marine, providing advice on marine mammals on
25 behalf of Tamard.

MS GIBBS: I'm Nici Gibbs, I'm providing advice for Tamarind
on the impacts of commercial fishing.

MS MOKO-MEAD: I'm Te Taiawatea Moko-Mead, EPA Maori Policy
and Operations.

30 **MR ROGERS:** Robin Martin, RNZ.

MR EVANS: Gavin Evans, Independent News Services.

MS HEWETT: I'm Gen Hewett from the EPA.

MR FAITHFUL: Kia ora tatou, Luke Faithful. I wrote the
conditions report on behalf of the Board.

MR ALLEN: Kia ora tatou, David Allen, legal counsel for the Board of Inquiry.

MS WRATT: Kia ora, I'm Carolyn Wratt, I am assisting the Board with their decision.

5 **CHAIR:** Thank you. Might as well go round on the back table. Tuf, I've already introduced, and Christina.

MS KENNEDY: I'm Jacqui Kennedy, I'm preparing the transcript for the EPA.

10 **SPEAKER:** I'm Zac, I'm recording the audio and doing the presentations.

CHAIR: Well, we really are a closed group, aren't we. Well, the record is the record. All right, I'll just see if there's anything else I need to - well, I guess there's no point in the rest of the information which is really
15 for other parties who are not here, so Ms Wallace, do you want to just proceed, thank you.

MS WALLACE: Thank you, sir. So I've prepared legal submissions and I have ten copies of those, if they could be distributed. (Copies distributed).

20

**OPENING SUBMISSIONS BY MS WALLACE
ON BEHALF OF THE APPLICANT**

MS WALLACE: Thank you, sir, so I'll start from the

5 beginning.

(Ms Wallace reads opening submissions from start of
paragraph 1.1 to aisle end of paragraph 1.7)
At section 2 I outline the scope of my legal
submissions, I don't propose to read that.

10 (Ms Wallace continues reading opening submissions
from start of paragraph 3.1 to end of
paragraph 3.2.1 before (a))

And I've just summarised there for you how those
sections are configured.

15 (Ms Wallace continues reading opening submissions
from start of paragraph 3.2.2 to end of
paragraph 3.8.4)

So, in terms of Tamarind's evidence I'll be calling
10 witnesses. They have already introduced themselves
so I propose just to treat that as read.

Section 5, statutory framework.

20 (Ms Wallace continues reading opening submissions
from start of paragraph 5.1 to end of paragraph
5.7)

25 I've set out section 59(2) at 5.8, and section 59(3)
sets out further matters and I'm sure you're familiar
with those and section 59(5) sets out matters you must
not have regard to.

(Ms Wallace continues reading opening submissions
30 from start of paragraph 5.12 to start of
paragraph 5.21)

"Section 39(1)" I think that's meant to be "(c)", sir.

(Ms Wallace continues reading opening submissions
from first line of paragraph 5.21 to end of
35 paragraph 6.8.3)

And that includes any effects from the deep drilling or discharges.

(Ms Wallace continues reading opening submissions from start of paragraph 6.9 to end of paragraph 6.21)

5

Sorry, there's a spelling mistake there. That should be "dilution".

(Ms Wallace continues reading opening submissions from start of paragraph 6.22 to mid first line of paragraph 6.29.5 - "...due to the deep ocean")

10

"Environment".

(Ms Wallace continues reading opening submissions from end of first line of paragraph 6.29.5 to end of fifth line of paragraph 6.36)

15

I've listed those there, I don't propose to read that out.

(Ms Wallace continues reading opening submissions from start of paragraph 6.37 to end of paragraph 12.1)

20

I won't say too much about those, but:

(Ms Wallace reads paragraph 12.3 of opening submissions)

So, in other words, not entitled to impose conditions which relate to other marine management regimes.

25

(Ms Wallace continues reading opening submissions from start of paragraph 12.4 to end of paragraph 15.13)

I've set out the purpose of the Act and how Tamarind believes it meets the purpose.

30

(Ms Wallace continues reading opening submissions from start of paragraph 17 to end of paragraph 18.4)

Sir, as previously mentioned, informal conferencing has occurred between Mr Faithful and Dr Lane, and a document has been prepared which summarises where the two experts

35

have got to. If that could now be provided. (Copies distributed).

(Ms Wallace continues reading opening submissions
from start of paragraph 18.5 to end of
5 paragraph 18.7)

Attachment 2 to the memorandum is essentially the clean
version of the conditions in which there are four
conditions on which agreement haven't been reached, and
those are as I understand it shown in orange highlight.
10 So, with respect to those four outstanding matters, I
refer to the marine consent conditions in attachment 2,
and specifically condition 7.

(Ms Wallace continues reading opening submissions
from start of paragraph 18.8(a) to end of
15 paragraph 18.8(b))

So, you'll see there is the suggestion to include "and
water-based fluids" as well, and that's Tamarind's
preference to incorporate both.

In terms of the marine discharge consent, see
20 condition 7 is showing in orange.

(Ms Wallace reads opening submissions from start of
paragraph 18.8(c) to sixth line of paragraph
18.8(d) - "...deck drains")
Such as diesel or paint.

25 (Ms Wallace reads opening submissions from
seventh line of paragraph 18.8(d) - "Additionally,
it is possible...", to end of paragraph 18.8(d))
And indeed that was the DMC's finding in the recent OMV
consent.

30 Finally, I just note that there is a correction
needed to Condition 10 of the marine consent. That
condition talks about there only being 12 anchors on the
seabed at any one time, while Tamarind's intention is
for there to be 12 anchors at each location. As
35 indicated in the further information, it does intend to

pre-lay an additional four at the next site. So, there will be 16 anchors in total on the seabed at certain times of the drilling programme.

CHAIR: Just take us to that. Which condition is that?

5 **MS WALLACE:** Condition 10. So, the proposed wording is that there be a maximum of four placements and that each placement shall consist of no more than eight anchors and four blowout preventer anchors on the seabed at any one time so we just need that -

10 **CHAIR:** It's 11(a) in our version, that's all. We've got slight numbering differences, that's all.

MS WALLACE: Sorry, are you looking at attachment 2? (Board members confer).

15 **CHAIR:** Okay, that's all right. We'll sort that out, thank you.

MS WALLACE: So, subject to those amendments and clarifications:

(Ms Wallace continues reading opening submissions from start of paragraph 18.10 to end of paragraph 19.2)

20

CHAIR: Thank you, Ms Wallace.

MS WALLACE QUESTIONED BY BOARD COMMITTEE MEMBERS

25 **MS PAINE:** Good afternoon, Ms Wallace. I was looking as you were talking in your para 5.26 and talking about the MACA and protected rights marine title, and then you made another comment about the same sort of thing in 12.3. I just wanted to ask, has there been any thought given to the implications in regards to this application if a marine right or title was to be recognised? Taking into account what you said in 12.3 about section 63, I think. I would just like if you could explore that for me.

30

MS WALLACE: Sure. I mean Tamarind's taken a legal approach to the assessments its required to undertake, and given that at the moment those claims aren't considered existing interests under the Act, a specific assessment of those rights as they may be granted has not been undertaken, and I guess to do so could be a speculative exercise because it's not yet known what might ultimately be granted. But in terms of the aspects of those claims and the Maori values associated with them, my submission would be that the Impact Assessment assesses those in terms of Maori environmental values and the way in which it might affect existing interests.

CHAIR: Can I just follow that one through. Are you aware of any group, other than the ones we've already canvassed in the submissions here, who have actually made a claim which might affect the AOI? Because if the answer to that is it would be the same groups, well, that's already covered off obviously in any event.

MS WALLACE: I can clarify that for you but my understanding is that Ngaruahine have made a claim, Taranaki have made a claim, I'm also aware that Te Atiawa have made a claim, and those iwi are the ones whose rohe are within the AOI and order it. I can't confirm whether there are any others.

MS PAINE: Actually, I ask that question about giving any thought to that as if they were recognised. Was there some where any thought given to a condition that would say that would be, I don't know, revisited? But that's by-the-by.

My other question was where you were talking about existing interests and you were talking about following the EPA's Incorporating Maori Perspectives. And then I wondered, like you've notified a certain amount of iwi and then when you say Ms Gibbs has actually talked about

all iwi have actually interests in that area, how did you rationalise that?

MS WALLACE: It's a good question and it's a difficult one to grapple with. As outlined in Mr Peacock's evidence, the process for identifying existing interests that were likely to be affected involved understanding whether there were already existing interests in the AOI and considering likely effects of the planned activities on those, and so that is what led to them determining that Te Kahui and Ngati Tara were the appropriate entities to consult and seek feedback with.

In terms of the effects of an unplanned event such as a spill and effects on broader interests, so fisheries interests, which are all iwi. As I understand it, it was deemed not feasible to undertake one-on-one consultation with all of those entities. So at some point a line needs to be drawn as to where you can undertake meaningful consultation and where you need to notify to see whether any of those interests consider that they may be affected.

MS PAINE: I understand your point, Ms Wallace. What about the opportunity for the iwi? I'm not saying about the consultation one-on-one, I'm talking about the opportunity for all of those iwi existing interests?

MS WALLACE: The opportunity to?

MS PAINE: To participate.

MS WALLACE: So, Tamarind sent out letters to all iwi and also to the Deep Water Fisheries Group, which is an entity that deals with the quotas which are held with the Deep Water Fisheries.

So, Tamarind's engagement process was two-fold. It was to consult on a one-on-one basis with existing interests that were thought to be likely affected by planned activities, and then to notify all those who may be affected by unplanned activities and/or whose

interests were perhaps not directly affected but could be indirectly affected, by sending a letter to them and advising them that if they wanted to find out any more information, if they felt like their interests were
5 going to be affected, they were invited to then contact Tamarind to discuss it further. And of course, in addition to that the EPA then also notifies all of those entities as well of the application.

MS PAINE: Thank you.

10 **CHAIR:** But presumably that broadcast wasn't to all iwi?

MS WALLACE: The EPA's notice was - the application was publically notified, so through that mechanism all iwi were notified of the application. Tamarind did not send a letter to every iwi in the country but, as I said, it
15 did send a letter to the Deep Water Fisheries Group.

CHAIR: And presumably that was also informed by the conclusions reached, that the effects were negligible in any event?

MS WALLACE: That's right.

20 **CHAIR:** So it wasn't just a pragmatic response?

MS WALLACE: No. The Act of course directs that the Impact Assessment has to correspond with the scale and significance of effects. So, that assessment was undertaken as to where these adverse effects were, how
25 significant they were, report to what extent they might impact, and then the decision was made as to who to consult with and who to notify.

MS PAINE: Thank you, David.

CHAIR: The first one is at 3.2.1 of your submissions. I
30 just want to double check, you've carefully written up to four existing wells and some of the other evidence indicates that in actual fact it's three wells. I know three is on the way to four but can you just clarify, are we talking three or are we talking up to four?

MS WALLACE: The intention is to only drill three, but the application is to drill four, or up to 4.

CHAIR: You needn't answer that now but as long as we get an answer by the end as to whether we're talking about
5 three or four.

MS WALLACE: So, the application remains for up to four but Tamarind I guess is just wanting to be helpful to the Board and to indicate that at the moment its intention is only to drill three.

10 **CHAIR:** Okay, thank you. Generally throughout there's a conclusion as to whether something is of low, minor, unlikely, negligible or ALARP. Can you wrap those all up. Basically are these all the same, or are these micro distinctions that we need to take notice of?

15 **MS WALLACE:** That might be a question you want to put to the experts.

CHAIR: It will be a question, yes. I mean, there's no - I guess ALARP, whilst I'm well aware of how ALARP is used around the world, there's no actual standard that
20 requires that measure of threshold.

MS WALLACE: Certainly my understanding is that in terms of that impact significance table that experts commonly use where effects are minor, low or negligible they are generally considered of no concern.

25 **CHAIR:** I guess it's more the ALARP that I'm going to be questioning, since ALARP is ALARP. There will be some questions later for probably Mr Peacock, about the loss of well control, and how that happens and precisely where along the line it actually happens. In my mind
30 I'm still not entirely sure whether this is something that happens at a point between drilling and production, or whether it's part and parcel of this actual consent, or whether it actually relates to a subsequent phase, because I don't fully understand from the documentation
35 the point at which the pressures are, you know, you

actually penetrate to a pressure where in actual fact you're going to get sufficient negative head, if you like, to actually get stuff up on the surface.

5 So, I guess I'm just forecasting that I actually want to hear a little bit more about that to understand whether that's actually part of what we're concerned about, or part of something entirely different. And it doesn't need to be answered now. I'm really foreshadowing that probably for Mr Peacock, but it may
10 be from somebody else as well. I mean, a lot of time is spent on that particular issue but if at the point where this consent stops, and I'm not even sure when that is and I guess that's another question, when do you know when you've gone far enough and you've got what you
15 need? And that presumably is the point at which you may lose wellhead control, but I don't know. So, yes, if somebody can take me through that in due course that would be helpful.

MS WALLACE: I think that is best answered by Mr Peacock.

20 **CHAIR:** I'm giving him fair warning so I can get the answer.

MS WALLACE: But I would just say it is a highly unlikely but possible -

CHAIR: I accept all of that.

MS WALLACE: Associated with the drilling.

25 **CHAIR:** I accept the probability, it's just that I want to know when would it actually happen? If it did happen, when is it likely to happen, and is it part of establishing this consent or is it part of some other?

MS WALLACE: It is part of this consent, that's why we have
30 assessed it.

CHAIR: We'll get the answer on that one, that's good, thank you. A general question. The non-interference zone that gets requested and put on in due course, presumably that doesn't prevent passage. Interference

presumably - so it's not an exclusion zone, as such, it's just a working exclusion zone, is it?

5 So, a passage, and faults and all those sorts of things actually come into a risk equation at that point, so I'm just curious as to whether or not non-interference is actually - I mean, I'm happy for an answer to come forward just to clarify at this point.

MS WALLACE: It is all vessels.

CHAIR: So, nothing can come within the 500 metre zone?

10 **MS WALLACE:** That's correct.

CHAIR: Be it a warship or a submarine, or anything like that?

MS WALLACE: That's correct.

CHAIR: Absolutely. Civil and military?

15 **MR PEACOCK:** Excuse me sir, without permission.

CHAIR: So, you would have to radio in basically to you guys and say, "I'm coming in", or "Can I come in", or whatever, or is to Maritime New Zealand, or who gives permission?

20 **MR PEACOCK:** There is a PIC, a person in charge on the FPSO and he provides specific permission to enter the 500 metre exclusion zone.

CHAIR: And that would include your wells, or just the FPSO?

MR PEACOCK: That's correct for the drilling rigs as well.

25 There is a PIC on the drilling rig as well who provides that specific endorsement to enter into the -

CHAIR: A piece of paper just came forward. You might just want to look at it and see whether your answer is correct or not. A little bit more subtlety, please.

30 Thank you for that.

14.6, just a general question on this. The appeal on that matter, do you know is that solely on the adaptive management or is it appealing whole of Churchman's decision. I mean, I know that holds at the moment, well

subject obviously to qualification, but do you know if that's -

MS WALLACE: Sorry, was the appeal just on that one issue?

CHAIR: Is it just on the adaptive management issue or was it
5 wider than that?

MS WALLACE: No, it was wider.

CHAIR: So, it's a general appeal on a whole -

MS WALLACE: Obviously there were specified points of law
that were appealed. It related to the way in which
10 cumulative effects were assessed, it related to the way
in which existing interests were considered, and it also
related to the adaptive management regime.

CHAIR: Yes, all right.

MS WALLACE: Without having committed that entire decision to
15 memory. There were possibly other issues.

CHAIR: Well, there a lot of other issues that relate to what
we have to tick off --

MS WALLACE: Correct.

CHAIR: -- and whilst that won't be heard and determined
20 before we make our call, probably, so we don't need to
worry too much about that.

Just a note for you. In terms of 15.10 we also
sought information from MBIE with respect to these sort
of informal Government policy on the matter, so just for
25 the record on that one.

MS WALLACE: Apologies for that omission.

CHAIR: And I think bar going back over some of the
conditions later on, I think I'm okay. Yep, I'm good,
thank you very much Ms Wallace.

30 **MS WALLACE:** Thank you, sir.

CHAIR: Mr Allen, did you want to challenge your colleague at
all? Open invitation here.

MS WALLACE QUESTIONED BY LEGAL ADVISOR

DR ALLEN: Oh good grief, this could be fun. Sir, you picked up the paragraph 3.2.1 point which I'd flagged so that's
5 useful.

CHAIR: So I've earned my money, have I?

DR ALLEN: Yes. Sir, the only other points may be, one comment from Ms Paine and it will be something to consider, is I'm not sure, I understand the Tui Field is
10 50 kilometres offshore. In terms of the Takutai Moana Act, the actual recognition is within the territorial sea, which is 12 nautical miles. So, I'm not sure the nautical miles versus kilometres but my assumption is, and my learned friend can correct me if I'm wrong, my
15 assumption is, is that it would be beyond the 12 nautical mile territorial sea limit. So, therefore it would be the more indirect rather than direct effects on a potential area, be it either a protective customary interest or a customary marine title. Just one point
20 there, while I flick through.

CHAIR: I think my metric is I think 1.8 kilometres to a nautical mile.

DR ALLEN: I knew you'd know so that's why I was just assuming.

25 The other ones I can come back to that in questions. There's comments, and I will ask in questions, so just it's a bit of a flag as well, that the nine months versus the 5 years, and obviously from a cost perspective there's issues about, you wouldn't want it
30 to go longer than you need it to, but equally there is and a lot of the descriptions are based on temporary nine months of drilling. Nine months comes up, so I'll be talking to Mr Peacock shortly about that, and also to either Mr Peacock or Mr McCallum about the protection
35 zone that actually you've already raised, just in

relation to whether it's the lines go 800 metres or 500 metres beyond. I think Ms Gibbs says 800 but the protection zone is 500. So, just some little ones there. Most of these are in terms of the legal matters. And the consent conditions, I will be going through those with the witnesses too. Equally, like the panel, I've just seen those and so I will have questions on those consent ones. So, thank you, sir.

CHAIR: Thank you, Mr Allen.

MS WALLACE: Sir, could I just touch on one of those issues and that's in relation to duration.

CHAIR: Yes.

MS WALLACE: So, the intended duration of the drilling activities is nine months. Five years is sought in the event that the drilling rig for whatever reason is unable to make it here next year. As I'm sure you can appreciate, there is a significant amount of work that goes into getting a drilling rig to New Zealand. It takes years of planning to get a rig to New Zealand, and in for any reason the rig is unable to make it here, the procurement process will need to start again and that time will be needed to ensure that a rig can get here and that the drilling programme can be undertaken using an alternative rig.

CHAIR: All right, thank you. We might take a 15 minute break and resume again at about 25 to. Thank you very much.

(Hearing adjourned from 3.23 p.m. until 3.38 p.m.)

CHAIR: Thank you very much, we'll reconvene. Mr Peacock.

30

**EVIDENCE OF JASON PEACOCK
ON BEHALF OF THE APPLICANT**

MR PEACOCK: Thank you, tena koutou katoa. As you know I'm
5 Jason Peacock. I'm currently employed as the
Country Manager for Tamarind Resources here in
New Zealand.

CHAIR: Do we have a statement, do we? (Copies provided).
Thank you very much.

10 **MS WALLACE:** Sir, would you like me to confirm his statement?

CHAIR: No, we'll take that as read, thank you very much.
We'll dispense with formalities as much as we can.
Thank you.

MS WALLACE: That's fine with me.

15 (Mr Peacock reads statement from start of
paragraph 1 to mid fifth line of paragraph
3 - "...relates to")

Noting that Iain McCallum, Mr McCallum will provide much
more detail on the drilling and technical side of
20 things.

(Mr Peacock continues reading statement from mid
fifth line of paragraph 3 - "My evidence also...",
to end of paragraph 4)

Here in New Zealand we have about 15 permanent employees
25 in the office and there's approximately 30 people
offshore on the FPSO Umuroa.

(Mr Peacock continues reading summary statement
from start of paragraph 5 to end of third line of
paragraph 8)

30 A company based out of Singapore.

(Mr Peacock continues reading summary statement
from end of fourth line of paragraph 8 to end of
first sentence of paragraph 9)

And as mentioned a couple of times today, this
35 particular project is of significant importance to

Tamarind as production rates post 2019 become very challenging.

(Mr Peacock reads paragraph 10 of summary statement)

5 Health, safety and the environment is very important to Tamarind and to all of our industry.

(Mr Peacock continues reading summary statement from start of paragraph 11 to end of paragraph 13)

10 Associated with health, safety and environment is preparedness in the event of an untoward event such as a spill, and so to respond accordingly to a potential spill Tamarind has in place the Tui Field Spill Contingency Plan. This document is approved by Maritime NZ and the EPA, and the objective of this Spill
15 Contingency Plan is to safely mitigate the effects in the unlikely event of a spill arising from Tamarind or its contractors' activities within the Tui Field.

I should point out that our Spill Contingency Plan is in respect of our existing operations and also in
20 respect of the drilling operations in which this consent is in respect of.

(Mr Peacock continues reading summary statement from start of paragraph 15 to end of paragraph 16)

25 Biosecurity is a factor that we need to be very conscious of.

(Mr Peacock reads paragraph 16 of summary statement)

30 Which was released earlier this year. Tamarind and our drilling contractor have met with MPI on several occasions this year and we have a very clear understanding of the requirements of that standard.

(Mr Peacock continues reading summary statement from start of paragraph 19 to end of paragraph 21)

Our commitment to community is a very important part of our business and we have a number of people in our organisation who spend much of their time dealing with and liaising with the community. My evidence refers to
5 a little bit more detail around the commitment that Tamarind has in respect of developing and maintaining long-term relationships with the community. We're very proud of these efforts of all of those involved, and we continue to strive to provide opportunities for the
10 growth of the opportunity around Taranaki and further afield.

(Mr Peacock continues reading summary statement from start of paragraph 23 to end of paragraph 30)
Thank you.

15 **CHAIR:** Thank you, Mr Peacock.

JASON PEACOCK QUESTIONED BY BOARD COMMITTEE MEMBERS

DR McCLARY: Thank you, Mr Peacock, I just have a question
20 regarding, let's look at your primary evidence, section 6, Biosecurity Risk Management. In particular you indicated that the vessels will be all meeting the Craft Risk Management Standard. Can you tell me if Tamarind has given any particular consideration to the
25 types of measures that will need to be taken in order to meet that standard, which is quite high?

MR PEACOCK: Yeah, look our understanding of what will be required in terms of the biosecurity measures for the rig will be that it has to be cleaned completely before
30 it leaves its point of origin. There will need to be some management of ballast water as well as part of that process, and there will obviously be some sort of inspection by MPI when it arrives in the country.

We have consulted with MPI a couple of times on this
35 particular issue and we believe that we have got a very

clear understanding of what's required, that being that a specific Craft Risk Management Plan will need to be developed and endorsed by MPI before we depart from the origin.

5 **DR McCLARY:** Thank you.

CHAIR: Mr Peacock, I've got a number of them. I'll just run through them in a second but just one thing I wondered about in terms of your summary. In terms of paragraph 14, how far does the Spill Contingency Plan reach? Does that reach down as far as a loss of control, or is it simply a, you know, is there a threshold between the spill and a, whatever the alternative is?

MR PEACOCK: So, our Spill Contingency Plan is in response to an event where there is a loss of containment and there is some type of product on the sea that's undesired, a spill. In respect of how we manage an event that results in that spill, there is a different set of documents for that in place, and that's largely covered by a thing called a Well Control Contingency Plan, and what that plan does is that provides for us a framework and a structure around how we respond to an event occurring within the well that might lead to a spill. So, they're two quite separate things.

25 **CHAIR:** That's helpful. So, the Well Control Contingency Plan is a document approved by whom?

MR PEACOCK: The Well Controlled Contingency Plan is approved I believe by Maritime NZ.

CHAIR: Well, the next question is fairly obvious in that case, isn't it. Do we need to concern ourselves with that issue then, or is that actually covered off by this alternate maritime authority?

MR PEACOCK: Our position would be -

CHAIR: I mean that may be a question for you Ms Wallace in due course but I'm keen to know where the edges of this

responsibility are, if is an event that we need to worry ourselves about. So, if I could get an answer on that in due course, that would be very helpful.

5 Question, and I'm just going to your evidence here and I've got a number of notes on my thing and some of them will be relevant and others won't be, but I won't tell you which is which.

MR PEACOCK: Thank you.

CHAIR: You can work that out for yourself. The first one I
10 have is, are any further EEZ consents required for production or are those already pretty much - I mean, I know there's the non-notified ones that are currently before the EPA, as I understand them, and I don't know if that's been lodged or not yet, but generally have you
15 got all the consents you need for production? When this finishes you go straight into pumping?

MR PEACOCK: Yes, that's correct.

CHAIR: And in fact, you can start doing that obviously
before you finish the third one of these ones
20 presumably?

MR PEACOCK: That's correct. When the first well is finished, we'll look to bring that on production as soon as we can.

CHAIR: All right, so there's nothing more that you actually
25 think you need?

MR PEACOCK: No, that's correct.

CHAIR: Right. Okay, just bear with me as I turn the
electronic pages here. Now, you've noted in 3.4 a point of difference, the company is an operator of late-life
30 oil and gas assets, yet the company has only been going for three years, four years. Just sort of persuade me that that's true?

MR PEACOCK: It's a good question. Tamarind's genesis is from, is through a number of individuals who have a vast
35 amount of experience in the oil and gas industry. These

individuals have come from other companies who also have experience in late-life asset management, and the individuals that make up our company came from the divisions of these other companies where they looked at redeveloping particularly older assets in the Asia/Pacific area. These individuals left this company and started up Tamarind because they saw that they had a niche that they were particularly good at, and they took their 30-40 years' experience and created a company in that respect.

So, while Tamarind is young as a company, the individuals who provide the intellectual property and the intelligence behind what we do, have a lot of experience.

CHAIR: So, when you talk about late-life oil and gas assets, are you talking about the reservoir or are you talking about the infrastructure? I wasn't clear what you were getting at, at that point.

MR PEACOCK: That's a good question, and could I give that it's both, but in particular it's about the reservoir. So, for an asset like Tui which currently has a life of about 10 or 11 years, we produce most of the reserves in the Tui asset, so we're late-life. For an asset that is much larger in scale, it may have an asset life of 50 years, obviously late-life is much longer.

CHAIR: It's a bit like us, really.

MR PEACOCK: So Tamarind, we are a company that's particularly good at getting those last barrels out of an asset, whether it's after five years or whether it's after 50 years.

CHAIR: Yes, I was interested in the phrase that's come up several times already, extending the life of the field when in actual fact you're depleting it, but that's another matter, yes. That's a perspective. Right,

that's a gratuitous comment in case anyone thought it was anything other than that.

5 Let me just see where else we are going and I think I know the answer on this. At your 4.12 you're discussing the subsea wells and associated infrastructure and you note there are five subsea flowlines. Is that because I think in the diagram it's shown that one actually links into another one and then comes to the - that's what it is and that's why you've only got four mid-water arches, 10 because two go into one?

MR PEACOCK: That's correct, they're daisy-chained together.

CHAIR: Yes, I thought it was a chain of some sort. I was going to ask which three you're actually going for but you may not want to answer that.

15 **MR PEACOCK:** Look, I can tell you which three we think we're going after at the moment, and we're reasonably sure about this. We're going for a Tui well which is the accumulation to the south, we're going for an Amokura well which is the accumulation in the middle, and we're 20 going for a Pateke well. So, one from each of the three accumulations that we have. Look, we don't think that will change but never say never at this point.

CHAIR: So, in terms of how the field is actually working, there's some left in the three parts of the field, are 25 there? Is that how it sort of is in layman's terms?

MR PEACOCK: That's correct. So, the wells that we have in the ground at the moment that are producing their reservoir fluids, are draining from a confined area so to speak and they're not reaching some of the other oil 30 and gas that is too far away. And I guess the analogy would be if you put a straw in a swimming pool and you suck on it, you're not going to get the water from the far end of the swimming pool for a very long time. In the fullness of time we would -

CHAIR: Well, I hope you're more sensible than that. You're not coming anywhere near my pool in that case. No, I understand the analogy, thank you.

5 5.7 where you've said, "The process of side-tracking all of these wells is expected to take no less than 110 days". I guess I have to make a comment there. This 110 also appears in the monitoring. Is that pure coincidence, that the same number is used there? 110 was the modelling amount of time to sink the relief
10 well.

MR PEACOCK: Oh, this was in the oil spill modelling. No, that is a coincidence.

CHAIR: It is a pure coincidence, is it?

MR PEACOCK: Yes.

15 **CHAIR:** Of course we all believe in coincidences, but that's good. Just one question, how far apart are the well heads that we're talking about? What sort of steaming times are we talking between, you know, for the rig to move from one to t'other?

20 **MR PEACOCK:** Less than a day, it's just a few hours.

CHAIR: That's what I thought, it looked fairly close.

MR PEACOCK: There's about two and a half to three kilometres between the Tui and the Amokura well, and then the Amokura well and the Pateke are about another
25 five kilometres.

CHAIR: Oh, it is quite confined, thank you. (No further questions from Board Committee Members). Mr Allen.

JASON PEACOCK QUESTIONED BY LEGAL ADVISOR

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MR ALLEN: Just a couple of general questions first, Mr Peacock and just so I'm crystal clear, and I think your legal counsel said it and you've discussed it with Mr Hill, the application is for four wells but the

intention is for three but the four is staying there just in case.

MR PEACOCK: Correct.

MR ALLEN: Thank you. Now, in terms of the length of
5 extraction, so you mentioned the straw analogy and then you somehow, and I won't pretend to know how, suddenly turn it at right angles and drill across.

MR PEACOCK: Mmm mmm.

DR ALLEN: Will that extraction be quick or would it be over
10 the period through to 2024/2025 when the permit ends?

MR PEACOCK: That's a good question and the Tui wells have a particular peculiarity in that respect. So, a vast majority of the production from these wells comes in the early part of the well's life, and then there's a very
15 long flat tail that takes us out to 2024/2025. So we expect, and don't quote me on these numbers but you might get a third of the production -

CHAIR: Don't give us the numbers if you don't want us to quote you on them.

MR PEACOCK: You might get a third very quickly and then
20 two-thirds over a longer period of time.

DR ALLEN: Because I just noticed that seems to be how the original field behaved.

MR PEACOCK: Absolutely. Yes, that's correct.

DR ALLEN: Then staying with general things, how many times
25 have you been out to the field, to the FPSO?

MR PEACOCK: Me personally?

DR ALLEN: Yes.

MR PEACOCK: When I was in a more junior position I would go
30 out every month to two months, and as I've moved up the seniority I would actually go offshore four times a year to see staff and engage with them and so on.

DR ALLEN: And I think it was Mr Thompson, or Dr Thompson's
35 evidence talks about readily seen seabirds. Have you seen seabirds out there?

MR PEACOCK: Yes, we do. We don't see a huge amount of seabirds which is unusual but there are seabirds out there, yes, correct. In the vast numbers you might expect in the North Sea, we don't see those sorts of numbers where we are, no.

DR ALLEN: And the FPSO I understand is lit at night as well, which the drill rig would be too.

MR PEACOCK: Mmm mmm.

DR ALLEN: Is the FPSO bigger than the drill rig, or are they sort of comparators?

MR PEACOCK: Dimensionally different, so one is long and skinny, the FPSO is long and skinny, the drilling rig is a bit more square in shape. You could say they're comparable in size, yeah.

DR ALLEN: And then also with marine mammals, have you seen marine mammals out there?

MR PEACOCK: Yeah, we do, we see them very regularly. So, we have a seal colony that lives in and around the FPSO, so we have them resting on some of the equipment we have in the water. We see them climbing up the anchor chains and they live inside the turrets. So, it's a particularly unpleasant place to go because seals aren't very nice to smell, and then we regularly see whales around the FPSO during the migration season. So, yes.

DR ALLEN: So staying generally, the spills. As I understand it the spill modelling for small spills like chemicals on board et cetera through the drainage system, which Mr McCallum will cover, is 20 litres or 20kg has been used as the maximum, and that's a fair replicating, or a fair number for the other experts to build from, or Mr McCallum's better for that one?

MR PEACOCK: Maybe I'll defer to -

DR ALLEN: I'll wait with that one. So then, just in your evidence, and you've mentioned it in terms of staff in New Zealand, which I assume is operational staff, but in

terms of the drilling operation, what are the sort of staff numbers around that?

MR PEACOCK: The drilling rig has the capacity to accommodate a fairly large number of people, so approximately 140 to 5 150 people. We don't think we'll need that number of people. Mr McCallum can maybe talk in a little more detail on this when he's on the stand, but we're talking somewhere in the order of 100 to 120 people on board the drilling rig at any one time. Now, they work in shifts. 10 So we also have a shift who are off at any one time who are back onshore, and a shift that are on the rig at the time. So total number of people you could say is in the order of 200 to 250 people that would be involved directly on the drilling rig.

15 **DR ALLEN:** So the shift is around 100-120, and then you would have other people on top of that?

MR PEACOCK: On the rig at any one time we would have 100 to 120, but they work a rotational shift of three or four weeks and then they have three or four weeks off. 20 So at any one time you have what we call a back-to-back, so an individual who does the same role as you who's on the beach when you're working.

DR ALLEN: And this might again be for Mr McCallum but do you know the sort of, is that an international work force 25 that comes with the rig, or is it New Zealand based people in New Plymouth already, or a mix of the two?

MR PEACOCK: It's a mix of the two, and so we have some obligations from a union perspective to provide staff to a certain level within the crew and complement, and so a 30 large majority of the crew will be New Zealand or Australian residents. The rig will also come, because it's a very complex and it's a quite specific piece of equipment, the rig owners and operators need to bring people who are appropriately trained to operate that 35 rig. So, some of those more senior members of their

staff will be international staff. So, the PIC or the person in charge will more than likely be an international person, and some of the senior people below him will also be international staff we would expect -

5 **DR ALLEN:** And they're all the details that Mr Colegrave's used then as the basis of his assessment in terms of economic benefit?

MR PEACOCK: That's correct, yes.

10 **DR ALLEN:** And this one came up earlier as well, and again it might be for Mr McCallum --

MR PEACOCK: That's okay.

DR ALLEN: -- but in terms of drilling and risk of a spill, in terms of the larger spills, is drilling more risky than production in terms of potential spills, or is it a 15 50/50?

MR PEACOCK: That's a question. It's a good question. It's a question that's very difficult to answer in general. So, if I speak specifically to the Tui wells, because 20 the Tui wells are a specific type of situation. Our wells produce a lot of water and the problem with producing a lot of water as a production process is that the water prevents the wells from flowing at high rates, so we have to provide a natural lift mechanism. So, we 25 inject gas in our wells to allow them to flow. So, it's like the Coca-Cola bottle. If you shake it and the bubbles are in it, it will squirt out. So, it's the same mechanism that we do. We inject gas in there to make it bubble up and flow.

30 If we turn off gas lift, our wells will not flow because their hydrostatic column's too heavy. Now, when we first drill the wells, the composition of the oil and water mix is more favoured towards oil. As I said before, a vast majority of production is early on so 35 there's a lot of oil. In those situations the wells

will flow naturally and could pose a risk to us in terms of a spill if we didn't manage them properly. If they won't flow, obviously we can't have a spill.

5 So, for Tui, the drilling process is one that we need to manage very carefully. All operators manage it very carefully, but we need to manage that very carefully because the wells if not managed properly could result in some sort of well control incident.

10 **DR ALLEN:** And in your experience in New Zealand, has such an incident ever happened?

MR PEACOCK: An offshore well control incident that's resulted in a spill, no, no.

15 **DR ALLEN:** And you might not be able to answer this but in terms of Tamarind do you have knowledge of that globally?

20 **MR PEACOCK:** We've never had a well control incident in Tamarind, and I can also say that, well, I've spoken to New Zealand, so the previous operator, I've heard them say they've never had any. It's a rare occurrence in our industry.

25 **DR ALLEN:** At paragraph 3.31 you mention the community funding that you do, and just that's an ongoing budgeted funding, or is it proportional to production, or it just depends on the year as community groups come up with ideas et cetera?

30 **MR PEACOCK:** You know, this is a discretionary part of our operating budget obviously. It's a very important part of our operating budget as well. We see it as part of our license to operate, but it is discretionary. When production rates are very high and all the rates are high, we are able to secure more funding for the community, and when they're lower and we don't have as much free cash, obviously the amount of money that we're able to provide to the community reflects that.

What we've made a very strong point of doing over the last 10 or 11 years is having long-lasting and productive relationships with our sponsors, with our community relationships. So, you can see the list there I provide you are ones that we've had in place over a long period of time. Now, the levels of sponsorship that we provide may go up and down a little bit but we've been there for them for the last ten years essentially. So, that's the key thing for us, is just being regular and available in that respect.

DR ALLEN: Now, earlier I mentioned the nine months, and actually Mr Hill has taken you to paragraph 5.7 already. As I understand it you need five years in terms of timing for the rig to get here, depending on when it may or may not get here, but the intention is that once it's here, that nine months is a period that is reasonable for the drilling of the three wells to occur, given potential weather conditions?

MR PEACOCK: That's correct, yep. It's probably fair to say that my boss won't be happy if we use the nine months, but situations with drilling being what they are, whether it's weather or whether it's delays due to problems with the rig, or other unforeseen events, may mean that we could take as long as nine months to drill these three wells.

However, if for some reason the rig doesn't arrive, whether it's through a contractual reason or whether it's through a problem with the rig itself, and we have to go back and start this process again in terms of the engineering, the contractual processes we need to go to, that's a long lead time, that's a two or three year lead time to get to that particular position.

So, we're asking for five years in the very unlikely event that the rig doesn't arrive and we have to start again.

DR ALLEN: And this might be one to think about rather than to answer now, but would Tamarind in terms of once the drilling starts, be open to maybe, because a number of the experts have used that nine months sort of period, be potentially open to a condition around that? But that's something maybe to dwell upon.

MR PEACOCK: Yep, okay, yep.

DR ALLEN: I think you might have covered this but at 9.2 you talk about Tamarind's good track record of other projects. So, your summary actually mentions some of the projects. But I was just wondering what is the list of projects that Tamarind is involved in or has been involved in? Whether you know it, I'm not sure.

MR PEACOCK: I can't speak for all of Tamarind and what I should also say is that when we speak about Tamarind here in New Zealand, it's important to note that the staff that I have here in New Zealand have been with this asset for the past ten years. Largely speaking, we've had some people come and go but the team that we have here in New Zealand have been involved in this asset for a long time. They came from AWE through to Tamarind, myself included, and these staff were involved in, many of them in the original drilling of these wells and subsequent intervention work that's occurred in 2010 when we had to do a thing called a work-over on one of our wells. We've drilled 11 I think, off the top of my head, exploration wells in the Taranaki area over the last ten years, and most recently we drilled a development well called Potiki4H back in 2014. So, this team here has very very specific history and experience with drilling wells in the Tui Field.

Tamarind as a larger organisation has less experience with Tui because Tamarind only brought this asset back in 2017. But, as I referred to earlier, the management of this company at the corporate level, all have a lot

of experience in the oil and gas industry. So, our management are not just investors, they're actively involved in this business and have actively been involved in it in the past.

5 **DR ALLEN:** And just picking up on that in your comment earlier about community engagement, the same with iwi engagement, from memory you've been involved with Tui since 2008?

MR PEACOCK: Correct, yes.

10 **DR ALLEN:** I presume you've had numerous meetings with iwi et cetera, hui over of the time in Tamarind's, well, now Tamarind's engagement?

MR PEACOCK: Yes, that's correct. So, in my previous roles I was involved in a more operational perspective. But, as
15 I say, as I've been promoted through the organisation to now as Country Manager, I'm involved in discussion with maybe perhaps some of the more management positions at iwi. I can say that I attend most, if not all of the hui that we have with Taranaki Iwi, with Ngaruahine, and
20 also with Otaraua in this recent process, and I do make a point of making sure I know these individuals. I think personally would be too much of a stretch, but I do know them from an engagement level, yes.

DR ALLEN: Now, sorry, Mr Hill, in terms of, my 5 minutes is
25 well and truly up.

CHAIR: I wasn't going to make a comment on that.

DR ALLEN: You never give a lawyer a microphone, I tell you
but just -

CHAIR: You won't have one tomorrow.

30 **DR ALLEN:** Just briefly on the - and it will be brief given that comment, on the conditions. Do you have a copy of the conditions that was just handed out earlier?

MR PEACOCK: I do. Just let me turn to that.

DR ALLEN: So, I'm on page, well page 12 of the marine
35 consents.

MR PEACOCK: Could you tell me what condition number that is sorry, because I'm on a different copy?

DR ALLEN: It's condition 11A, capital A. On my version it's page 12, and this might be for Mr McCallum but -

5 **MR PEACOCK:** While I'm looking for it why don't you ask me the question because I may know the answer.

DR ALLEN: The question is should those numbers, and I'm just trying to work out whether they've been fixed in the interim with the different discussions, but should those
10 numbers, I think maybe they should be 12 and 8, and maybe it's for Mr McCallum but it should be 12 drill rig anchors, because my understanding is the rig will require 8 anchors but you might pre sort of load, or whatever the word is, four for when you shift it.

15 **MR PEACOCK:** Yep.

DR ALLEN: And equally the blowout preventer anchors are 8 as well.

MR PEACOCK: So let me answer this, and please interrupt me if I -

20 **DR ALLEN:** I'll leave it for Mr McCallum, if you want.

MR PEACOCK: All right, yes.

DR ALLEN: I just want to make sure that number is right. Then turning to, and again actually this is probably Mr - the synthetic based drilling muds is probably
25 Mr McCallum rather than yourself? Yes, Lauren is nodding so I'll move on.

And then what's the final red flag? Oh, that's for Mr McCallum too. Thank you. Thank you, sir.

CHAIR: Thank you, Mr Allen. Just one follow-up from me,
30 Mr Peacock. Is sidetracking any riskier than direct drilling or primary drilling? I mean, are there any sort of worries or concerns that one should take into consideration in terms of sidetracking?

MR PEACOCK: No, look, I'd suggest that it's probably a lower
35 risk. We have a lot of the well construction process

already completed. So, when you have casing in the ground and cement around that casing, you have a pressure envelope, then that's secure. And so we're getting down to a depth of no shallower than 1400 metres, but potentially deeper than that, where we're actually going to start drilling. So, I think our argument would be that sidetracking is a safer operation rather than a riskier one.

CHAIR: Just on the reservoir itself, I think somewhere in the evidence it talks about it being at negative 3600 metres, and that's the top of the reservoir or how do you measure that?

MR PEACOCK: Yes, that's the top of the reservoir, that's correct. We drill very close to the top of the reservoir too.

CHAIR: Which is where the oil is obviously.

MR PEACOCK: Yes.

CHAIR: So, what sort of depth will you be going down to? I mean, is that a uniform depth across the field or I imagine it varies by a few hundred metres or something, but is it more than that?

MR PEACOCK: Yeah, largely speaking, the relief that we see across the reservoir is less than a few hundred metres. You're talking tens of metres in terms of column of reservoir. So, yes, plus or minus 15 metres around 3600 metres below the seabed is roughly where we're talking about.

CHAIR: Thank you for that. Ms Wallace, did you want to clarify any questions?

MS WALLACE: No, thank you, sir.

CHAIR: All right, thank you, Mr Peacock, appreciate your time. Thank you for coming but I guess you had no option. Mr McCallum I think.

**EVIDENCE OF IAIN McCALLUM
ON BEHALF OF THE APPLICANT**

CHAIR: Do you have a supplementary statement, Mr McCallum?

5 **MR McCALLUM:** I do I think. Just before I start -

CHAIR: That's impossible. Sorry.

MR McCALLUM: I would like to bring the Board's attention to
my evidence of paragraph 2.30 of my statement where I
reference section 16A of the Crown Minerals Act 1991.
10 This should actually read 101(b) of the Crown Minerals
Act 1991.

(Mr McCallum reads paragraph 1 of summary
statement)

15 My primary evidence provides an overview of the Tui
Phase Three Project and the activities that are planned
to take place during the intervention and drilling
campaign.

(Mr McCallum continues reading summary statement
from start of paragraph 3 to mid fifth line of
20 paragraph 5 - "...impact to the environment")

(Mr McCallum continues reading summary statement
from start of paragraph 6 to mid third line of
paragraph 6 - "...wells from 3 locations")

25 The 2 contingency well options would only be used in the
event of a re-drill from one of the side tracks from one
of the 3 planned wells. This means that Tamarind does
not plan to moor the rig more than three times. I can
also confirm that the drilling rig will use 12 anchors
at each location. I detail this information within -

30 **CHAIR:** I'm sorry, Mr McCallum, can I, just because you're
varying a bit from the text that we've got here. Can I
just check, in that sentence that reads "at this stage"
you omitted the "but again". Was that deliberate?

MR McCALLUM: The what, sorry?

CHAIR: You've got in the printed text "but again an additional mooring location may be necessary". Is that now omitted, is it? Have we got different texts?

MR McCALLUM: Oh, I haven't got that one. (Copy of summary statement provided to Mr McCallum).
5

CHAIR: There were a number of things that were different, that's all. I just wanted to check whether or not you were just paraphrasing, a paraphrase or not.

MR McCALLUM: No, I'm not sorry.

10 (Mr McCallum reads summary statement from mid last line on page 2 - "but again an additional mooring...", to end of third line of paragraph 16)

CHAIR: We can take that as read, thank you.

(Mr McCallum continues reading summary statement
15 from start of paragraph 17 to end of paragraph 19)

MR McCALLUM: Thank you.

CHAIR: Thank you, Mr McCallum.

IAIN McCALLUM QUESTIONED BY BOARD COMMITTEE MEMBERS

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DR McCLARY: Just one question for you, Mr McCallum. I refer to the marine surveyors's letter from DNV-GL, in particular their last point they refer to, "There is a possibility to lead drain water to a shore connection
25 (to a service vessel) and there is also a possibility to lead water directly from the bilge settling tank and overboard by opening a normally closed valve, the last possibility will however not ensure the oil content of water going overboard". Can you comment on that please?

30 **MR McCALLUM:** I'll just read that again, if you give me a second. (Pause). "Tank and overboard by opening a normally closed valve". This valve is generally shut so it would only be if you opened the valve.

DR McCLARY: So, this would be a valve normally locked to
35 prevent accidental opening?

MR McCALLUM: Correct, it's controlled by the control room as well. It's not controlled manually.

DR McCLARY: Thank you.

MS PAINE: Just one question and it was about concrete being brought back to shore. Where does that concrete come from?

MR McCALLUM: The cement? The only part of the programme we have cementing in, is when we abandon or seal off the lower bore, the old well. So, we set a number of plugs, cement plugs in the lower part of the well. If that cement comes up too high for us to create our side track, then we have to mill the top of that cement off so we can set our side track point at that point. So, we would have done that back to the surface and it's at that point. So, it's a very minimum amount of cement we have in the programme.

In other wells, they would have a lot more because you're cementing around the outside of the casing. We don't have that in this programme.

MS PAINE: Thank you.

CHAIR: Thank you, Mr McCallum. Just talk me through this issue which I've been talking about already, which is this loss of control and how that might actually come about. I mean, I understand from what Mr Peacock was telling us that we haven't got a, if I can use the term a unified geological strata here whereby if you suck one end, you're going to pull everything through as you might with an aquifer, for example. So that when you actually penetrate to the area that you're wanting to get the oil from, it's actually, in some ways it's a confined or a semi-confined strata, is it? And that's why you've got the pressure that actually may create, or I guess might provide the ground conditions for a loss of control, is that how we see it?

MR McCALLUM: Not really. I'll try and explain. So, the reservoir pressure is normally pressured or below normal pressure, which means it's the same pressure as the rock above it, or less.

5 **CHAIR:** Yep, yep.

MR McCALLUM: So, penetrating the reservoir will not have any over pressure. These, the wells we've designed are quite robust and there is, as Jason already pointed out a lot of the well is already in place. So, where we
10 side track from is quite, the integrity of the well is already in place so we're sidetracking into the reservoir from only about 300 metres above the reservoir, and when we hit the reservoir it's actually under pressure. So, there's no part of this programme
15 that we actually go under pressure, go under balance.

A well control incident could occur if for some reason that balance is lost, be it losses or, basically losses -

CHAIR: What does losses mean?

20 **MR McCALLUM:** Sorry, we get losses into the reservoir and we can't control them. But this reservoir is actually normally pressured, so even sea water would stop it flowing because it's normally pressured.

So, the only time you would get a well control
25 incident is if you swabbed in the well. So when you're pulling the drill string back out of the well, you could swab it in. But we have procedures in place to prevent that happening and we've got alarms in our pits and in our drip tank to tell us if we are swabbing in the well
30 or not. If we were we would simply pump through the drill string while opening it, pulling out the hole.

So, primary well control is all about balance of the well. So, you've got an over-balance on the reservoir. At no point in this programme are we drilling under
35 balance.

CHAIR: So you don't see it this as happening, as even likely to happen by the sounds of it?

MR McCALLUM: It's always a risk to the drilling industry so we take it very seriously, but in these wells it's very highly unlikely.

CHAIR: But what you're telling me is that you have the management controls in place to avoid that entirely?

MR McCALLUM: Yes, with the management controls and the equipment in place.

10 **CHAIR:** So, is it inconceivable that a different situation might result in a loss of control? Is that the only, that's the only situation that would result in that, when you're pulling the string out?

MR McCALLUM: No, there's a few others but, I guess, to go through the whole risk assessment would take a while but if we had losses enough that we couldn't keep up by pumping down the well to create an over-balance, then we could get a loss of over-pressure. In that incidence we would shut the BOP. So that's the secondary well control equipment.

CHAIR: But that's not going to give rise to a 110 day event.

MR McCALLUM: No.

CHAIR: So I'm just trying to think -

MR McCALLUM: We always have to prepare for the worst.

25 **CHAIR:** You normally work on the worst credible. I'm not hearing you say it's a credible event. I accept it's a very low risk.

MR McCALLUM: No, as an engineer I'd never say never.

CHAIR: Well, you're one of the first engineers I've come across that would say that. You mean at this table you might say. Okay, all right, I've gone far enough with that one, thank you. Oh, what I did want to understand and I understand that the 15 part per million oil to water, so the concentration or the concentration is a MARPOL threshold?

MR McCALLUM: That's correct.

CHAIR: Is that threshold being re-examined or is that so
universally accepted as having no significant effect if
it's, you know, below 15 parts per million that it's
not -

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MR McCALLUM: I don't know if I can answer that. What I can
answer is that this, the rig we've selected, the
equipment on board will reduce it way below that
threshold but I can't answer the MARPOL.

10 **CHAIR:** So if it will go below that, as I read it, the 15
part per million is an automatic sort of device. It
gets to 15 and then everything shuts down and you have
to do what you have to do to dilute it further or
whatever. Can that threshold be lowered?

15 **MR McCALLUM:** No, it's based on the sensors, so.

CHAIR: So you would need a completely different set of
sensors obviously to put it lower than that. All right,
well it would be helpful if somebody explained what the
relationship between that 15 parts per million and the
other sort of thresholds, and I don't know who will do
that. Can somebody do that? Because we've got 6 parts
per million and one point on toxicity and all sorts of
other things and my head is sort of running around with
different thresholds and I'm trying to put them together
for some reason.

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MS WALLACE: She may not thank me for this but I would
suggest that Dr Lane is the person to answer those
questions.

CHAIR: She's not looking hopeful. All right, obviously
MARPOL is MARPOL and I understand that we've imported
that same threshold here or we use that same threshold
here, but I just don't understand what the consequences
of that are. I don't know what they are. So, I don't
know whether it's a good threshold or not, even if
MARPOL says it's okay. Because typically international

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standards are best fit in terms of people around the table. They're not necessarily the best result. I suppose that's a statement rather than a question.

Right, see where else we go. (Pause). And just on
5 the 110 days for the modelling, and this may be
Dr King's question I suppose, but is that based on
knowledge that Tamarind has of genuinely how long it
would take to sink a relief well, or that's just a
figure that is put into the modelling do you know?

10 **MR McCALLUM:** No, that's an estimate that we've given the
modellers. So, that's an estimate of how long it will
take to contract another rig, get it down here and drill
the rig well.

CHAIR: So, the assumption is that the existing rig you're
15 using would not be able to do that job?

MR McCALLUM: The assumption is that the rig would be able to
do it but the assumption on the 110 days is yes, it's
not available and we have to get another rig.

CHAIR: But if the rig's already here, I'm just trying to
20 work out in my head. This blows-out while the rig is
still here presumably, otherwise what are we consenting?

MR McCALLUM: It's based on the worst case. So, the worst
case would be that the rig wasn't available, so in
another scenario the rig would just re-drill a relief
25 well within 30 days.

CHAIR: In how many days?

MR McCALLUM: 30 days.

CHAIR: Okay. And why do you think you can get another rig
here in 90 days?

30 **MR McCALLUM:** There's quite a number of rigs. We have a
contract with West - they used to be called [Liggett], I
think they're called. We now have a contract that shows
exactly where rigs are available, and we have talked to
a number of drilling contractors already to ascertain
35 how long it would take to get a rig here.

CHAIR: So, that's a reasonable guesstimate of what's available in the next year, maybe not five years' time but -

MR McCALLUM: That's right, just based on the current market.

5 **CHAIR:** Okay, thank you. Mr Allen.

IAIN McCALLUM QUESTIONED BY LEGAL ADVISOR

DR ALLEN: Thank you, hello Mr McCallum. Just first, just so
10 it's very clear in my head and I fear I'm being dim with this one, but in terms of the drilling numbers et cetera, am I correct that there are four potential drilling locations?

MR McCALLUM: There's three locations, the three planned
15 wells we were going to do but we have consented for four locations.

DR ALLEN: So there's four locations. Within those four locations there's the potential on a worst-case basis for five wells, or five side track?

20 **MR McCALLUM:** No, there's only going to be three side tracks, the two continuously side tracks would only be used if there was a geological problem and we'd have to side track within the side track, or there's a mechanical problem and we need to side track past that side track.
25 So, we anticipate to, we plan to drill three wells.

CHAIR: Can I just confirm, so the two contingency side tracks would be within the side track of one of the other three?

MR McCALLUM: Yes.

30 **CHAIR:** Got it, thank you.

DR ALLEN: Thank you. And actually, just while we're on that point, the discussion I had with Mr Peacock about the nine months for the drilling once drilling has started, that's a reasonable timeframe factoring in potential
35 adverse weather, interruptions for mechanical type

failure and things, or is that quite a tight sort of timeframe?

MR McCALLUM: No, that's the longest we think it would take. So, we anticipate taking between 110 days and 120 days
5 or something, but if we did have any problems, nine months would be as long as it would take.

DR ALLEN: So potentially the same question, it could be a potential condition if it was relevant when they come to the various technical experts?

10 **MR McCALLUM:** What, the nine months?

DR ALLEN: Yes.

MR McCALLUM: It's something to consider, I guess.

DR ALLEN: Just one other thing that I mentioned earlier too, and it touches on an earlier question from Mr Hill I
15 think it was, about the protection area and how far outside the anchors will go. Am I right, and I understand from Ms Gibbs' evidence that the anchors may extend up to 800 metres outside the current area --

MR McCALLUM: Correct.

20 **DR ALLEN:** -- but you could only maybe protect 500 metres, or could you protect the full 800?

MR McCALLUM: We will apply for a protection 500 metres from the anchor point, so that's not been done yet.

DR ALLEN: So the 500 is from the anchor point?

25 **MR McCALLUM:** Yes.

DR ALLEN: Thank you for that. Just you mentioned this in your summary, you've got the contract for the rig and the intention is of course to use it, but if it's not used and you've said somewhere in here, and it might
30 have been Mr Peacock, the intention is to use a rig of similar sort of characteristics. Again, and I'm not sure if this is in the latest set of conditions but that could be potentially conditioned? Because I'm just wondering, there are a lot of benefits, as I understand
35 it, from the rig that's being proposed.

MR McCALLUM: Yes.

DR ALLEN: And it's incredibly high performance new technology. If you couldn't get it but you could get a budget Warehouse version of drilling rig, I know that
5 wouldn't happen but I'm just wondering in terms of condition, that the performance will be similar?

MR McCALLUM: Yes, the performance would be similar. We contract the rig based on the conditions we put in place anyway.

10 **DR ALLEN:** So, you've already been asked some questions about the drainage and the report from, recent report from DNV-GL, do you have that?

MR McCALLUM: I do, yes.

DR ALLEN: I'll let you find it. I've just got a couple of
15 questions on that. (Pause).

MR McCALLUM: Sure.

DR ALLEN: And at the bottom of page 2 of 3, it's question 4, the bottom of that page it says, "If the valve on the overboard pipe is kept closed, the possibility the oily
20 water is discharged to sea is eliminated". Can you see that comment?

MR McCALLUM: Yes, this is about the cement unit -

DR ALLEN: Yes. So just checking again, in terms of is that the one in the earlier, I think this might be a
25 different valve, but whose obligation is it to ensure that's kept closed? Is it locked, or control room?

MR McCALLUM: This valve is actually not used any more, it's locked out. It is an operational valve that is used - it's controlled by the control room and it's
30 actually used for when the, when they've completed a cement job they'll clean the tanks, and then they have to get rid of that and they don't want, they don't like sending it down the drain system, because cement down a drain system causes a lot of problems, so they discharge
35 it and they do it under a permit. So it's permitted,

it's checked and then it's discharged. So, that's what that valve is there for. However, it's currently being locked out so it's actually discharged to the mud skips of the shaker side. So that's already in place, it's
5 locked out, that valve.

DR ALLEN: And therefore that possibility of oily water has been eliminated?

MR McCALLUM: Correct.

DR ALLEN: Then at paragraph 7 over the page, and Dr McClary
10 has already asked you a question on this one, but the first part of that response is, "There is a possibility to lead drain water to a shore connection (to a service vessel)". Is that going to be needed?

MR McCALLUM: Yes. We always are going to be - we're not
15 going to be sending rain water back to shore, but we'll be sending product back to shore and we have dry brakes on our couplings, and they're examined and tested.

DR ALLEN: So, that's the process that's in place to ensure that that connection to the supply vessel operates
20 effectively?

MR McCALLUM: Yes, correct.

DR ALLEN: Thank you. Now, this is a condition one and earlier you would have heard me talk to Mr Peacock about it, but the number of anchors on the different rig heads
25 and the Condition 11A and what those numbers should be, and sorry, I'm just finding 11A while I speak, but as written here it's, and I'm just looking at the - do you have that latest condition set in front of you?

MR McCALLUM: I do.

DR ALLEN: So, in my version it's page 12 and it's
30 Condition 11A.

CHAIR: This is on the anchors?

DR ALLEN: On the anchors. And so it's a Tamarind proffered condition and recommended amendments, and I think this
35 is a new one drafted by Mr Faithful initially, but it's

got 8 and 4. My understanding is that that should be 12 and 8, is that correct?

MR McCALLUM: No, there would only ever be 4 blowout preventer anchors, they're moved with the rig. The most simple way to write this and pragmatic, is to change that last word from "time" to "location". So there would only be 8 and 4 anchors on the seabed at any one location, and I think that would kind of cover it. But the pre-lay would -

10 **DR ALLEN:** Does that then avoid this whole pre-lay issue --

MR McCALLUM: Yes.

DR ALLEN: -- of where you're going next.

MR McCALLUM: Just to clarify that each anchor would only be laid once, so there's no additional impact from pre-laying.

CHAIR: So, at any one time, you've done the pre-lay for the rig, so you've got the 8 where it currently is --

MR McCALLUM: (Nods).

CHAIR: -- and how many have you got in the new location?

20 You lay all 8?

MR McCALLUM: No, only 4.

CHAIR: Only the 4 corners, right-o. Just in case we have an alternate thought about how that's expressed.

MS WALLACE: Sir, I would be happy to put some words around this condition and then apply just to close -

CHAIR: It's belts and braces, that one, so there's no confusion. I don't want the EPA having to dive down and check it out at 125 metres.

DR ALLEN: Just while we're on the conditions, actually we may as well just finish the other comments on those. The next one is condition, in my version 11C, which is page 14, and this is the SBM condition. Now, probably like you I'm just reading it now for the first time, but on my understanding there's concern about conditioning that there will only be SBM used, and therefore there

was concern that that condition in effect would not be able to be achieved by Tamarind. Do you mind just explaining to me, because my understanding from the request for further information et cetera was it would be SBM, not WBM, but can you just explain to me where things are at there just so I'm clear please?

MR McCALLUM: Yes, so it's kind of a technical term, well, it's not that technical. So, when we arrive on the well there's an intervention part of the activity. The intervention part of the activity is latching on to the well, and going in the well and pulling out the completion that's already in the well. That is all done with either sea water or water-based fluids. Anything that's water-based.

Then once we've got the completion out of the well we cement the lower portion. That's done with a water-based mud system. Then we do milling of the, we mill a hole in the casing basically at depth. That is done, milling is done with a water-based mud fluid. It's basically sea water and viscosifiers et cetera. Then we drill the well and we use a synthetic-based fluid. So portion here, that's based fluid.

At the end of the well when we clean the well up and we basically replace the SBM back to a water-based mud fluid, so the completion has a brine basically in it, so that's got water-based fluids in it.

So, to say we're only going to be using SBM. We won't, we'll be using - so it kind of puts us in a bad situation. So, we had some thoughts around that. We could probably come up with something but technically I just scored out that top paragraph and said, "All cuttings and SBM from the drilling process shall be returned to the surface and disposed of on a land-based facility".

So, it's just trying to say, no, we won't be using just SBM but any of the SBM is recyclable, it's coming back with us.

DR ALLEN: And just so I'm clear, in terms of the

5 environmental effects, the difference between, SBM as I understand is like a continuous system, which is probably why it's drilling, as you said.

Environmentally are WBMs worse, or much the same, or in terms of effects on benthic, other modelling
10 communities?

MR McCALLUM: Probably Alison would be able to explain a bit more about that, but the SBM is re-usable to a certain extent. We can use it again and again on the

15 three wells. Water-based mud fluid you can also use again and again, but it gets tired very quickly so you have to use a lot more of it. The other thing with the water-based mud fluid is there is quite often a lot of chemicals you put into the water-based mud - not the ones we're using because we're using it for completion,
20 but if you were drilling horizontals, you'd need a very high spec water-based mud system, and they're not always better or worse depending on the system you use -

DR ALLEN: And then the recovery of the WBM, that would be recovered back to the well platform and then through the
25 treatment into skips et cetera, or would it be discharged?

MR McCALLUM: In the process for the drilling?

DR ALLEN: Oh, in the process for the drilling, as I understand it's SBM?

30 **MR McCALLUM:** Yes.

DR ALLEN: But when you're using the WBM for the initial work and for any completion afterwards, would that be disposed of to sea?

MR McCALLUM: That would be disposed of to sea. The
35 water-based fluids that we're using, they wouldn't,

interfaces wouldn't be, we would take that back to shore, but the actual - most of it's sea water.

DR ALLEN: Then moving on to a few conditions, and we're now in the Marine Discharge Consent Conditions, and this is Condition 8 on my set at page 30, and actually the question relates to page 31 which is highlighted yellow, which is the - and the Chair has already talked to you about this 15PPM limit for the continuous oil monitoring.

10 **MR McCALLUM:** Right.

DR ALLEN: Now, my understanding from your summary is that, well, correct me but my understanding from your summary is you're accepting 15PPM at paragraph 9, but I'm not sure whether that, my understanding - and again I'm just looking at it now - is that yellow bit is contested. So I was just wondering if you could just explain the concerns you have around the 15PPM monitoring in light of your paragraph 9?

MR McCALLUM: Yeah, there's no contest - we're not contesting the 15PPM, we're only contesting the word "constantly". So, it will be monitored.

DR ALLEN: Sorry, I hadn't read all the columns.

MR McCALLUM: Okay.

DR ALLEN: So the issue with that is it wouldn't be a constant like logger. You would do it at 2 hour intervals?

MR McCALLUM: The HYSY982 is constantly done, but most rigs have not, or most vessels under MARPOL, it wouldn't be constant for non-hazardous deck drains. That's why we're contesting. It's being monitored.

DR ALLEN: So it could be reworded. If we're using a similar rig, then would that be an important similarity, or this 15 - it might be a question for Dr Lane.

MR McCALLUM: The 15PPM would be monitored.

35 **DR ALLEN:** But it would be like a grab sample every day or -

MR McCALLUM: No.

DR ALLEN: If you're not using -

MR McCALLUM: On discharging it would be grab sampled when you're discharging.

5 **DR ALLEN:** Then you would know if you were in excess and you would stop at that time?

MR McCALLUM: Yes.

DR ALLEN: But in the interim, if it was like one sample every 24 hours, you would be discharging?

10 **MR McCALLUM:** Yes.

DR ALLEN: Okay. Well, I might leave that for people to think, but I'll ask Dr Lane some questions about that. But what you're saying is that the rig you're hoping to use would be able to constantly monitor -

15 **MR McCALLUM:** The rig we've contracted does, yes. It kind of exceeds expectations.

CHAIR: Can I just ask across on that one. So, is it, because I'm not clear whether there's a difference here or whether we're just shadow boxing. Is it possible
20 that if it's not constantly monitored that oil concentrations above 15 parts per million could go overboard?

MR McCALLUM: There would be procedures in place to prevent that.

25 **CHAIR:** What would they be, if you're not monitoring.

MR McCALLUM: Well, hold it in a settling tank and then -

CHAIR: How would you know? If it's 16 parts per million for instance, how would you know if you're not constantly monitoring it?

30 **MR McCALLUM:** You can test it and then discharge that amount.

CHAIR: We may be having an argument over nothing in that case. If you're going to test it that's the same as monitoring, isn't it?

MR McCALLUM: Yes, yes. It just wouldn't be constantly
35 monitored, we don't have the equipment to actually -

CHAIR: So, it's going to be monitored prior to release,
that's the key point.

MR McCALLUM: Yes, that's the key point.

CHAIR: So whether it is constant or not, it's neither here
5 nor there as long as it's monitored prior to release.

MS WALLACE: That's the point, sir.

CHAIR: Good.

DR ALLEN: That sorts that one out.

MS WALLACE: So, rather than constantly monitoring it on the
10 deck --

CHAIR: You could monitor it constantly.

MS WALLACE: -- it's monitored once it's, if and when it gets
discharged.

CHAIR: Yes, I understand that.

15 **MR PEACOCK:** Excuse me, sir, this is only in the event where
we don't use the actual 982 -

CHAIR: I understood that, but I also understood Mr McCallum
to be saying that he wants that flexibility in the event
where you don't have 982 but you're shaking your head?

20 **MS WALLACE:** Oh sorry.

CHAIR: Get your act together guys. I think that's right,
Mr McCallum, isn't it? You want the flexibility just in
case you don't get the HYSY, or whatever it is called?

MR McCALLUM: Correct.

25 **CHAIR:** Thanks, Mr Allen.

DR ALLEN: Thank you. Just briefly turning to your para 244,
but it's dealing with cement cutting volumes at the very
small level. As I understand it, so it's 22 cubic
metres is the maximum sort of at the small level where
30 there's the potential for cement cutting volumes. So,
that's still the same sort of threshold?

MR McCALLUM: Yes, correct. It's calculated based on the
three wells.

DR ALLEN: And this is all, I should have said, predicated on the basis most will be skipped to land but there would be residual.

MR McCALLUM: Yes.

5 **DR ALLEN:** So, that's the worst case, five - well, three side tracks with potential two side side tracks.

MR McCALLUM: Correct.

DR ALLEN: Thank you, Mr McCallum.

CHAIR: Mr McCallum, just before you jump up, just a
10 question, and I don't think we can actually do anything about it but what was the logic behind only having two contingent side tracks? I mean you've got three wells, what happens if you use the two up in the first two and then you hit a problem with the third? Why isn't there
15 a contingency on each well?

MR McCALLUM: Because we don't think we'd need it.

CHAIR: I know it's Melbourne Cup day, but that's sort of -

MR McCALLUM: Well, we have to come up with a number, don't we, so.

20 **CHAIR:** Yes, okay.

MR McCALLUM: Geological side track would be highly unlikely because they know the reservoir quite well. So, for them to say, okay, we're going to have to side track to a different location -

25 **CHAIR:** So this is professional pride we're talking about here, is it?

MR McCALLUM: The mechanical side track, that's the professional pride.

CHAIR: Oh well, okay, it's your application, that's fine.

30 Ms Wallace, did you want to -

IAIN McCALLUM RE-EXAMINED BY MS WALLACE

MS WALLACE: I just have one question, sir. Mr Allen asked
35 you about water-based muds and what the difference

between those was environmentally, and you talked about the fact that for some drilling activities the ecotoxicity between them is not too dissimilar, but could you just clarify for the Board what the difference is in terms of the water-based muds that Tamarind will actually be using?

MR McCALLUM: There's a huge difference between the synthetic-based muds and the water-based muds that Tamarind is going to be using. The water-based muds are basically sea water or brine and some viscosifiers, and that's all that's in them. The SBM has the base oil in it.

MS WALLACE: Thank you, sir.

CHAIR: Thank you. Well, Dr King, you have been waiting all day to address us but I'm not going to let you so you'll be very pleased about that. It's just gone 5 so I think we will call a halt to the proceedings for the day and any homework anybody wants to set anybody? (Board Committee Members confer). Not tonight, not at the moment. Okay, we'll rest on that. 9 o'clock tomorrow morning, thank you very much.

(Hearing adjourned at 5.06 p.m.)