Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River

Commission d'enquête sur le déclin des populations de saumon rouge du fleuve Fraser

Public Hearings

Audience publique

Commissioner

L'Honorable juge /
The Honourable Justice
Bruce Cohen

Commissaire

Held at:

Asia Pacific Hall at the
Morris J Wosk Centre for Dialogue
580 West Hastings Street
Vancouver, B.C.

Monday, December 19, 2011

Tenue à :

Asia Pacific du
Morris J Wosk Centre for Dialogue
580 rue Hastings Ouest
Vancouver (C.-B.)

le lundi 19 decembre 2011

APPEARANCES / COMPARUTIONS

Brock Martland Kathy L. Grant Jennifer Chan	Associate Commission Counsel Junior Commission Counsel Junior Commission Counsel
Mitchell Taylor, Q.C. Mark East Adam Taylor (Articling Student)	Government of Canada ("CAN")
Clifton Prowse, Q.C. Boris Tyzuk, Q.C. Tara Callan	Province of British Columbia ("BCPROV")
No appearance	Pacific Salmon Commission ("PSC")
No appearance	B.C. Public Service Alliance of Canada Union of Environment Workers B.C. ("BCPSAC")
No appearance	Rio Tinto Alcan Inc. ("RTAI")
Shane Hopkins-Utter	B.C. Salmon Farmers Association ("BCSFA")
No appearance	Seafood Producers Association of B.C. ("SPABC")
Gregory McDade, Q.C.	Aquaculture Coalition: Alexandra Morton; Raincoast Research Society; Pacific Coast Wild Salmon Society ("AQUA")
Judah Harrison	Conservation Coalition; Coastal Alliance for Aquaculture Reform Fraser Riverkeeper Society; Georgia Strait Alliance; Raincoast Conservation Foundation; Watershed Watch Salmon Society; Mr. Otto Langer; David Suzuki Foundation ("CONSERV")

APPEARANCES / COMPARUTIONS, cont'd.

Don Rosenbloom	Area D Salmon Gillnet Association; Area B Harvest Committee (Seine) ("GILLFSC")
No appearance	Southern Area E Gillnetters Assn. B.C. Fisheries Survival Coalition ("SGAHC")
No appearance	West Coast Trollers Area G Association; United Fishermen and Allied Workers' Union ("TWCTUFA")
No appearance	B.C. Wildlife Federation; B.C. Federation of Drift Fishers ("WFFDF")
No appearance	Maa-nulth Treaty Society; Tsawwassen First Nation; Musqueam First Nation ("MTM")
No appearance	Western Central Coast Salish First Nations: Cowichan Tribes and Chemainus First Nation Hwlitsum First Nation and Penelakut Tribe Te'mexw Treaty Association ("WCCSFN")
Leah Pence	First Nations Coalition: First Nations Fisheries Council; Aboriginal Caucus of the Fraser River; Aboriginal Fisheries Secretariat; Fraser Valley Aboriginal Fisheries Society; Northern Shuswap Tribal Council; Chehalis Indian Band; Secwepemc Fisheries Commission of the Shuswap Nation Tribal Council; Upper Fraser Fisheries Conservation Alliance; Other Douglas Treaty First Nations who applied together (the Snuneymuxw, Tsartlip and Tsawout); Adams Lake Indian Band; Carrier Sekani Tribal Council; Council of Haida Nation ("FNC")
No appearance	Métis Nation British Columbia ("MNBC")

APPEARANCES / COMPARUTIONS, cont'd.

Nicole Schabus	Sto:lo Tribal Council Cheam Indian Band ("STCCIB")
Steven Kelliher	Laich-kwil-tach Treaty Society Chief Harold Sewid, Aboriginal Aquaculture Association ("LJHAH")
Krista Robertson	Musgamagw Tsawataineuk Tribal Council ("MTTC")
No appearance	Heiltsuk Tribal Council ("HTC")

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MS. PANCHUK: The hearing is now resumed.
MR. TAYLOR: Thank you, Mr. Commissioner. It's 9:06. I understand I have 32 minutes.

CROSS-EXAMINATION BY MR. TAYLOR, continuing:

Q Dr. Jones, I'm going to begin this morning with some questions of you. There's several versions of what I call the Molly Kibenge manuscript, and you're familiar with that. There is an unlabelled, undated one, which is at Canada's Tab 30, and to the best of my knowledge that's Exhibit 2113, which we should probably have on the screen. And you're familiar with what I'm referring to, yes, by the unlabelled one?
DR. JONES: Yes, I am.
Q And then there's multiple copies with some differences between them of the one that has a title and a list of names on it. They're at Canada's Tab 18, and some of that is also at the Commission's Tab 29. And one of those versions is Exhibit 2045. We could put it up beside.
Now, starting -- the other one is going to come up and I think the date is pretty clear, but could you confirm -- yeah, within that, Mr. Lunn, there's some papers. Can you confirm, Dr. Jones, that what's on the right side of the screen is something that came into existence in 2004?
DR. JONES: On the right side of the screen, that document came into existence in 2004.
Q Right. And you've read both versions, have you?
DR. JONES: Yes.
Q We've heard, that is, you've read the right side of the screen and the left side of the screen. We've heard evidence from Nellie Gagné that she's tested some of Molly Kibenge's samples with negative results. Now, I'm correct that you're familiar with that testing that was done in 2004, are you?
DR. JONES: Yes, I am.
Q And is there any mention in either of the versions of Molly Kibenge's paper of those results that

Molly Kibenge found?
DR. JONES: No, there's not.
Q Now, on the titled version you'll see that you're the second named person in the part where there's authors listed. What was your role, if any, in that manuscript?
DR. JONES: I was the supervisor for Dr. Molly Kibenge, when she worked in the laboratory at the Pacific Biological Station, and as her supervisor it was my responsibility to ensure that the work was documented in the form of, ultimately, a manuscript that would be publishable. My role in this manuscript was to provide comments on the work.
Q All right. Is that -- what's the reason why your name is on the manuscript, then?
DR. JONES: Well, it's common practice that supervisors' names are included as co-authors on a document. Molly was the lead author on this, it was her work, and she drafted the manuscript, so it's not unusual that other researchers in the group would also be included as co-authors.
Q All right. Thank you. Now, you've testified that you are not confident in the results that Molly Kibenge obtained, and you've given reasons for that. But further in this regard, I'd like you to look at a document that, Mr. Lunn, if you could bring up on the screen, please, a document that has multiple pages that you would have received over the weekend. It's a previously disclosed document, but it's not in one of the books.
And when it comes up, there are page numbers in the upper right corner, and I want to go to page 13. And as it comes up, Dr. Jones, what I want to ask you about is reagent contamination. Yes, that's the document, if we could have 13. Thank you.
Can you just explain, firstly, reagent contamination, Dr. Jones?
DR. JONES: Well, in this context, the reagents refer to the chemicals that used in a mixture that form the basis of a PCR or an RT-PCR reaction, and reagent contamination refers to the possibility that those reagents have been contaminated with extraneous nucleic acids, which could cause a reaction to yield a false positive.
Q Okay. You're familiar with the page on the screen

and the series of documents or e-mails, are you?
DR. JONES: Yes, I am.
Q And whose writing is this?
DR. JONES: This is part of a report that was sent back to me from Professor Kibenge in Charlottetown that outlines his results from an assessment of material that was sent to him.
Q All right. Because we've got two Dr. Kibenges in play here, we'll have to use first names, too, I think.
DR. JONES: Okay. So Professor Fred Kibenge, in Charlottetown is the author of these -- of this document.
Q All right. And you'll see a reference in there to reagent contamination, about the middle of the text. Can you comment on the significance of the possibility of reagent contamination and how it influenced your thinking on Molly's results?
DR. JONES: Well, I think just to provide a broader context to this, is that we were trying to understand the significance of the PCR findings that Molly was obtaining and we're getting PCR positives in -- at a time where there was no other reason to believe that we should see ISA from samples that were obtained from wild Pacific salmon in British Columbia. So we were very, very sceptical as to drawing or at least hesitant to draw the conclusion that this was, indeed, ISA virus, so this is why we tried to repeat the samples, or the analyses on these samples. We'd sent them to other labs to be reassessed. And it was very important that any data that we obtained in this regard was impeccable, that we couldn't find in it any reason to doubt the validity of the information.

So when I read this, and I appreciate that Dr. Kibenge, Fred Kibenge, is an expert in ISA virus, when he raises the possibility and he says even though it's however small that this may have been due to reagent contamination, perhaps as a result of a graduate student working in the same environment, then in my mind this raises a question of concern as to the reliability of this evidence.

So it was another piece in the puzzle that caused us to have some doubt as to the reliability of this information.

MR. TAYLOR: All right. Thanks. May this series of documents be the next exhibit, please.
MS. PANCHUK: 2118.

EXHIBIT 2118: Series of e-mails between Dr. Fred Kibenge and Dr. Simon Jones re: ASK-2 cell line and viral RNA, et al, with attached untitled documents

MR. TAYLOR:
Q Now, the documents that we've seen as to Molly Kibenge's work drop off in about 2005 until a recent set of documents that came about in November of this year, and you've testified that she returned to the University of Prince Edward Island AVC in about the summer of 2004. When she left in -- the Pacific Biological Station in 2004, from then until recently, did you hear from Molly Kibenge about ISA at all?
DR. JONES: Yes, I did. I received an e-mail. It was, I believe, 2005, or early in 2005, I'm not sure of the exact date, but there was a time where she sent a message back to me with some information concerning results of analyses that she'd undertaken in Charlottetown. And the second time I heard back from her was at the end of 2005, or perhaps it was early 2006, suggesting that we discuss the manuscript in the context of a teleconference with Garth Traxler, myself, Molly, and Fred Kibenge. And to my recollection, that teleconference never took place, and that was the last communication I had with Molly Kibenge since -- until November 2011.
Q And November 2011 is when she asked if it could be published and you responded, "No," is that right?
DR. JONES: That's correct.
Q And your reasoning for that was what?
DR. JONES: Well, I was a bit disappointed and I was surprised when I got that e-mail. I was disappointed because it was, in my mind, timed to coincide with the current ISA events and it was timed to -- well, the timing seemed to be more than just a coincidence, it was seemingly to take advantage of the events. And it was a surprise to me that when I received the manuscript it hadn't changed since the version that we'd seen in 2004. So it was -- it did not mention, for example, the

Nellie Gagné results, it didn't clarify the inconsistencies in which the PCR results had been obtained, the difficulty to demonstrate reproducibility, it didn't clarify the results, for example -- or it did include, despite the weakness of the sockeye salmon, the Cultus sockeye salmon results, these were posed or presented as positive findings in the paper, and I -- I had to judge this work based on my own experiences as a scientist and as an author of a lot of scientific papers, many of which are published in the peer-reviewed literature. I sit on an editorial board of an international journal in fish disease, and I understand what is necessary to maintain, or what are the high standards that are necessary to maintain in order to publish this kind of work, and I felt that this manuscript didn't come close to achieving those standards.

Q All right. Exhibit 2114, if that could come up on the screen, and in there - this is also Commission Tab 110 - in there there's a series of e-mails from Molly Kibenge in February and July in 2005 and 2006, and I'm hopeful we can do this without searching into them too far. But there's reference to research that Molly was doing, and is the research that she was doing between 2005 and 2011 reflected in the manuscript you've got in November 2011, and would you expect it to be if it's not?

DR. JONES: Well, what she said back to me in these messages was the results of some further sequencing that she'd undertaken, as I understand that. I'm not sure which samples she was working on, but it would appear that they were additional samples to what she had been working on since leaving in June of 2004, but she did provide evidence in these -- or at least indication in these e-mails that she'd found additional sequence information, and I couldn't see any sign that that information had been included in the manuscript.

Q Okay. Dr. Klotins, I'm going to ask a question of you, now. Dr. Kibenge, Dr. Fred Kibenge, testified that he thought the lab assessment - and you're familiar with the lab assessment - that was done recently on the AVC and the Moncton lab, he thought that those lab assessments were to be collaborative and would compare the Prince Edward

Island and the Moncton labs. Then he testified that as it unfolded he determined or thought that it was really a challenge to his work or an attempt to discredit it that was going on. Are you aware of what was said to Dr. Kibenge at the outset, what was the purpose of those lab assessments?

DR. KLOTINS: I wasn't involved in the first telephone conversation between Dr. Kibenge and Dr. van der Linden and Dr. Con Kiley, but I believe that the purpose of the lab assessment, as described in the document, is what was iterated to Dr. Kibenge.

Q All right. And that would be, it is an exhibit, I don't know the number offhand, but Mr. Commissioner, there is a lab assessment plan that's been put in evidence.

The lab assessment on the Atlantic Veterinary College is more detailed than the one on the Moncton. The AVC lab assessment is Exhibit 2075 - we don't need it coming up, I don't think - and the Moncton one is Exhibit 2074. Do you know why the AVC lab assessment is more detailed than the Moncton one?

DR. KLOTINS: My understanding is the Moncton one hasn't been completed yet. They began with the AVC one and then we'll complete the Moncton lab one. I think that's undergoing completion now.

Q All right. So it's a timing issue, is it?

DR. KLOTINS: Yeah.

Q Could we turn to Commission Tab 24, please. Now, do you recognize this document, Dr. Klotins?

DR. KLOTINS: Yes, I do.

Q This is an exhibit, I'm sure, but I don't know the number.

MR. MARTLAND: 2087.

MR. TAYLOR: Thank you, Mr. Martland.

Q Who prepared this?

DR. KLOTINS: This was prepared by Ingrid van der Linden and the team that went to do the assessment.

Q And why was it prepared?

DR. KLOTINS: It was prepared to indicate the various procedures under the various titles that were carried out both by Dr. Kibenge's lab and the lab in Moncton.

Q And then you'll see over on the right side there's a column, "significance". Was that filled in by

the people you referred to who had prepared the assessments?
DR. KLOTINS: It would have been filled in by the lab assessment --
Q The team that was doing --
DR. KLOTINS: Team.
Q -- the lab assessment?
DR. KLOTINS: Yeah.
Q Now, you mentioned, in your evidence, as I recall, in answer to some of the Commission questions, that there is a lab assessment that's going to be done on Dr. Miller's lab; is that right?
DR. KLOTINS: I mentioned that that possibility could exist.
Q I see. So that hasn't been determined as yet?
DR. KLOTINS: No.
Q Do you know the timing of determination of whether there would be one done and, if so, when it would be done?
DR. KLOTINS: If -- I imagine that would be under discussion for next week -- or this week, sorry, this week, and I can't give you a timeline on when that assessment would be done.
Q All right. Thank you. Moving to Mr. Stephen as well as Dr. Klotins, if I could, for this question, can you say - and I'll start with you, Mr. Stephen - what's the significance, internationally, on Canada, of a confirmed report of ISA as a reportable disease, if there was such a confirmed report?
MR. STEPHEN: I believe Dr. Klotins is --
Q Okay.
MR. STEPHEN: -- better --
Q Let's go to her first.
MR. STEPHEN: -- able to answer that question.
DR. KLOTINS: If there's a confirmed report, then we would notify the OIE, as well as our specific training partners, where we trade both wild salmon caught commercially and salmon that are cultured in British Columbia. And we would have to wait and see what -- how countries would react, and then identify whether we can meet their conditions that they may impose on Canada for import of product into their countries.
We would also notify the rest of the provinces, as they may wish to put in controls for animals coming out of B.C. as well.

Q Thank you. Domestically, Mr. Stephen, is there anything that you would add to that?
MR. STEPHEN: With respect, if ISA was found in, for example, a hatchery, a salmonid hatchery in B.C., there would be controls put into place for any movement between provinces under the ***Fish Health Protections Regulations***. There would have to be health certificates issued and things and likely any recipient facilities wouldn't want to receive ISA-positive fish from those.
Q All right. Next, I'd like to turn to Exhibit 2112, which is the draft surveillance plan. It's also Tab 100 of the Commission binder. And at the same time, could we bring up Canada Tab 10, Mr. Lunn? So what's on the screen right now, the draft surveillance plan is 2112.

Dr. Klotins, I think I'm asking you, but other panellists may have information they want to jump in on, and I'll be brief, and I'd ask if you can be brief in your answers.

Why was that surveillance plan prepared, or why is it being prepared and is now in draft form?
DR. KLOTINS: During a disease response, so after we've received a notification, we try to garner information from the people that provided the notification from the people that we identify in any trace in/trace out, and from information that may be provided from samples, and we evaluate all that information, and in the end with this particular notification, there was not enough information to conclusively say that ISAV did occur in B.C. There were some questions still remaining on whether there had been enough surveillance in the past to find ISAV.

In addition, one of the consequences of this notification has been that countries are starting to -- were starting to ask for more information on our health status of salmonids in British Columbia, and the decision was made to initiate the surveillance plan a little bit earlier than we probably would have.
Q This appears to have multiple pathogens being surveilled; is that right?
DR. KLOTINS: Yes, it does.
Q And briefly, why is there multiple in there?
DR. KLOTINS: As I mentioned, countries were beginning to ask about our salmonid health status in British

Columbia.
Q So you wanted to cover off a number of bases, then?
DR. KLOTINS: We wanted to cover off a number of organisms that we regulate in addition to the ISAV.
Q Is there a time by which it's contemplated this will be finalized and then operationalized?
DR. KLOTINS: We're hoping to have it finalized, I would imagine, before the end of this fiscal, so by the end of March, and then implemented thereafter.
Q All right. Now, I understand that with what we're talking about in this set of hearings, there are two things in play. There are reports of ISA and testing done to determine whether there is a confirmed case of ISA for purposes of reporting to the OIE and, as well, there is science research being done by DFO scientists to inquire into whether there is a pathogen or ISAV or an ISAV-like virus. We've heard from scientists on Thursday and into Friday morning that with the mixed results that have been coming in, that further inquiry is warranted.
Do each of the panel members agree with that? I'll start with you, Dr. Klotins. That is to say, do you agree that further inquiry is warranted?
DR. KLOTINS: In terms of the research -- in terms of the research, it looks like there's some -- there needs to be more work done on the test development. It is not functioning in a robust manner and research needs to be done to identify what the issues are and can they be overcome. And I would say that is true, as well, in Dr. Kibenge's lab.
Q All right. Mr. Stephen?
MR. STEPHEN: Yes, obviously DFO supports scientific research and -- but at the same time, as Dr. Wright has spoken before, from a regulatory point of view and monitoring, you have to have validated tests. The tests that Dr. Miller and Dr. Kibenge are using, in particular Dr. Miller's new experimental work, has not been validated yet. So we are encouraging, as I mentioned on Friday, her supervisor to work and develop a plan to move forward with whatever she's started to develop now.

Q All right. Dr. Wright?
DR. WRIGHT: Well, I agree with everything that's been said. I mean, I would just want to point out that any further work that's going to be done has to be done in a multi-disciplinary fashion. So, I mean, we have to be working together, whether it's the epidemiologists, the people who develop the diagnostic tests, the people who are doing, you know, the disease research, it all has to come together. And so all I'm saying, and it's necessary, is it has to be a multi-disciplinary approach, otherwise we cannot access -- or assess, rather, what the risk, if this pathogen is there. The first thing you have to do is get a hold of this thing.
Q All right.
DR. WRIGHT: And we don't have that, yet.
Q Identify research plan and then decide how to proceed; is that what you're saying?
DR. WRIGHT: That's right.
Q Mr. Stephen, I want to bring you to a telephone call of November 24, 2011, and I know you were here in the hearing room when Dr. Miller gave some evidence about that call and you were on the call as well. Picking up on what Dr. Miller said, what do you have to say about that discussion or the part of the discussion that had to do with Dr. Miller's research vis-à-vis the regulatory regime and mandatory reporting and samples and anything else that you want to speak to briefly about your end of the call and how you heard the call go?
MR. STEPHEN: Okay, thank you. Yes, I did have the call with Dr. Miller, her supervisor, Mark Saunders, and a number of other people, and I did call in one of my staff, Alf Bungay, at the time. Dr. Miller -- it came as a surprise to us that Dr. Miller had been doing testing. Obviously, most people in this room and probably most people in B.C. and most of Canada, knew that an investigation on ISA in B.C. was ongoing by CFIA. So this report of new findings of ISA by Dr. Miller came as a complete surprise to us.
I did explain to her that, from a regulatory point of view it's important to have all the information available to us so that we can share that with CFIA, and I asked her a couple things about there research and her testing. I said,

"What method did you use?" She mentioned Dr. Kibenge's method and then she said, but she couldn't get his probe, she had to get other probes. So again, it was slightly modified from Dr. Kibenge.

I asked her, had she done our method, our validated test; she said, "No." I asked her, had she notified CFIA as required by the mandatory reporting, as we alluded to on Friday, and she said, "No," that she would be having reports -- she wouldn't report anything until she found something, or had verified her findings. So I again reminded her that we have a regulatory obligation to notify, anybody who suspects any finding of ISA or any other reportable disease.

I did tell her I'd be calling CFIA, but I had an expectation that she would be sharing her information with them as well.

Q Are you finding that it's a bit of a challenge to have research scientists move from what existed under an older regime to the new regime where there is mandatory reporting for certain diseases?

MR. STEPHEN: Well, this is a first time we've had any, you know, issue, I guess, with this, because, as I mentioned on Friday, I had arranged to let my assistant deputy minister share the mandatory reporting information with all DFO staff in February of this year. When it became apparent in discussion with Dr. Miller that she seemed unaware or maybe had forgotten this requirement, I deemed it was important to resend that message out, as was alluded to again on Friday.

Q All right. Dr. Wright, you mentioned in your evidence, in answer to Mr. Martland's questions, as I heard you, that you do some work with the OIE. Did I get that right?

DR. WRIGHT: Yes, I do.

Q And what is your role or work with the OIE?

DR. WRIGHT: I've been involved with the OIE since about 1991, and at that time I was overseas on leave for an international service. I actually represented a number of international groups, including FAO and WHO and International Atomic Energy, as an observer on the commission. And then, when I returned home, there as an agreement between the director general then and our chief veterinary officer at the time that Canada would

allow me to continue my participation on -- this is on the standards commission. It's just a terrestrial commission.

Q All right.

DR. WRIGHT: And basically I've been involved with a number of these organizations on the development of standards for validation of assays and promoting their use amongst all member countries.

Q All right. Thank you. On the left side of the screen is a briefing note, and I forgot to deal with this. Dr. Klotins, do you recognize that note?

DR. KLOTINS: Yes, I do.

Q Do you want to see the end of it? It appears to be a note about the draft surveillance plan.

DR. KLOTINS: Yeah.

Q Is that a note that CFIA sent to the minister responsible?

DR. KLOTINS: The CFIA sent it to the minister responsible.

Q All right.

DR. KLOTINS: I wasn't involved in the drafting of this, so I --

Q All right.

DR. KLOTINS: -- haven't read it, really, in detail.

MR. TAYLOR: All right. I'll ask that it be the next exhibit, please.

MS. PANCHUK: 2119.

EXHIBIT 2119: Memorandum to the Minister, Complementary Surveillance Effort in Cultured and Wild Salmonid Species in B.C.

MR. TAYLOR:

Q For clarity, who is the minister responsible for CFIA?

DR. KLOTINS: The Minister of Agriculture and Agrifoods Canada.

Q Thank you. If we could turn, please, to Exhibit 2104, which is also Commission Tab 75, and this is a question of you, Dr. Klotins, this is an e-mail that you wrote earlier, about a month ago, a month and a bit ago, I guess, about whether to test, and you've given some evidence about this already. My question of you is: What are the implications of a lab using samples and testing if it turns out that the lab can't do the work properly?

DR. KLOTINS: Well, they would basically -- they would -- it would follow the same disease response that we have followed for this notification where we would check into the information and identify -- identify the information we need to assess whether this is a true positive or a true negative.
Q But would you end up with the lab using up all the samples and so there's nothing more to do retesting?
DR. KLOTINS: Well, yes, that is a possibility. I did send out a directive to the commercial laboratories that they should consider saving samples that could be sent to the NAAHLS, the NAAHP, for confirmation. It would have been the same issue, though, in terms of chain of custody, because those samples were not collected by us.
MR. TAYLOR: All right. If we could turn to Canada's Tab 4, please, which is an OIE letter to Ms. Morton and, as well, her e-mail of November 17th of this year, I believe both those things are in Tab 4. They're not? And if you scroll down, I don't have any questions about this, but I want to be sure that they're both exhibits and I'm not sure. So I'd like this November 17th e-mail and the OIE letter of the 29th of November in response to be exhibits, either one together or two separate exhibits together is fine. Maybe it's easiest if they're two separate exhibits.
MS. PANCHUK: 2120.

EXHIBIT 2120: E-mail dated 11/30/2011, from Brian Evans to Cornelius Riley, Subject: TR: ISA virus British Columbia, with attached copy of OIE letter to Alexandra Morton

MR. TAYLOR: So they're one exhibit together? That's fine, thank you.
Q Now, if we turn to page 2 of the letter, you'll see, Dr. Klotins, the definition of a confirmed case. Is that the definition that you're working with in terms of whether you do or don't report something to the OIE?
DR. KLOTINS: Well, our policy is only to refer -- report confirmed cases to the OIE. We have our --
Q But is that the definition?
DR. KLOTINS: We have our definition, which is similar, in the hazard specific plan that we use.

Q All right.
DR. KLOTINS: Yes.
Q I'd like to turn, now, together, to Canada's Tabs 5, 6, and 7. Dr. Klotins, I think this question is of you. Are these CFIA documents? They appear to be documents pertaining to the lab assessments that were done.
DR. KLOTINS: Yes.
Q Do you recognize -- I see --
DR. KLOTINS: I recognize them, mm-hmm.
MR. TAYLOR: All right. I'm going to ask that these three documents be the next three exhibits, if we may.
MS. PANCHUK: Tab Number 5, 2121; Tab Number 6, 2122; Tab Number 7, 2123.

EXHIBIT 2121: CFIA Aquatic Animal Health Laboratory Assessment Working Group National Emergency Response Team (NERT)

EXHIBIT 2122: Summary of Information from a Document Review and On-Site Visit (November 18, 2011) for the ISA OIE Reference Laboratory at Atlantic Veterinary College

EXHIBIT 2123: LC480 Data Analysis of ISAV Testing at AVC, November 29, 2011

MR. TAYLOR: Tab 15 of Canada, this is an e-mail regarding -- or to Peter Wright. I'm just going to ask that it be marked as an exhibit, as I'm at or near the end of my time. If this could be the next exhibit, please.
MS. PANCHUK: 2124.

EXHIBIT 2124: E-mail dated December 2, 2011, from Peter Wright to Nellie Gagné, Stephen Stephen, et al, Subject: Paper authored by Molly Kibenge et al

MR. TAYLOR: Canada's Tab 26, I'm going to ask if that could be the next exhibit.
MR. LUNN: Mr. Taylor, I have four separate files for that tab number. The first is this e-mail, the next is the chart --
MR. TAYLOR: Yeah, it's all of it.
MR. LUNN: So all of those together?

MR. TAYLOR: Yeah.
MR. LUNN: All right.
MS. PANCHUK: 2125.

EXHIBIT 2125: E-mail dated December 9, 2011, from Nellie Gagné to Nellie Gagné, Subject: Latest tests on 2004 Molly Kibenge's samples, with attachments

MR. TAYLOR: Tab 39, may this be the next exhibit, please.
MS. PANCHUK: 2126.

EXHIBIT 2126: CFIA Call Log by Ray J. Fletcher, dated November 30, 2011

MR. TAYLOR:
Q Now, this is a call log you prepared, I think, isn't it, Dr. Klotins, of some work that Dr. Miller was doing?
DR. KLOTINS: Ray prepared this call log, Ray Fletcher, Dr. Ray Fletcher.
Q All right. Of CFIA?
DR. KLOTINS: Yeah.
MR. TAYLOR: All right. In the course of preparing for these questions, it's come to my attention that if you turn to, I think it's, page 4 of this document, this is a prepared form. I'm not going to take the time right now -- it's probably not page 4. Because it's a prepared form, when it was printed, the entry in a particular box isn't all there, so we're going to take steps to see if we can get the full document. There, you can see it at the top of the screen there's a box there with the call record in it, but because of the way the computer prints these things, some of the content, you can see, has been cut off and the log ends in mid-sentence. It is an exhibit, now. We'll see if we can fix it.
Next, Tab 42, which is an umbrella agreement. I'm going to ask if that can be the next exhibit.
MS. PANCHUK: 2127.

EXHIBIT 2127: Umbrella Memorandum of Understanding (MOU) on the Development and Implementation of a National Aquatic Animal Health Program between DFO and CFIA

MR. TAYLOR: Then we have Canada's Tabs 43, 44, 45, 46, 47 and 48, which are various web information sheets, and I think that is a total of six, yes, six documents. I'll ask that they be the next six exhibits, please.

MR. MARTLAND: I think Tab 46 is already in evidence as an exhibit. Tab 46.

MR. TAYLOR: We'll put in five, then, as the next five exhibits; 43, 44, 45, 47, 48. Finally, and I'm out of time -- I'll let Ms. Panchuk give the numbers.

MS. PANCHUK: Tab 43 is 2128; 44, 2129; 45, 2130; 47, 2131; 48, 2132.

EXHIBIT 2128: CFIA website Screenshot re Changes to the ***Health of Animals Regulations*** - Aquatic Animal Diseases, with attached weblink

EXHIBIT 2129: CFIA website screenshot re: Infectious Salmon Anaemia, with attached weblink

EXHIBIT 2130: DFO website screenshot re: Infectious Salmon Anaemia (ISA) Virus - Accepted Testing Methods, with attached weblink

EXHIBIT 2131: DFO and CFIA Joint Letter of Co-Operation on Fish Disease Management, dated November 18, 2011

EXHIBIT 2132: DFO, Protecting Canada's Aquatic Species from a Disease - a Focus on Canada's Pacific Region

MR. TAYLOR: Finally, as I am really out of time, Tab 27 is Nellie Gagné's testing of Dr. Miller's samples, Canada's Tab 27. I'm just going to ask if that can be the next exhibit, please. Thank you.

MS. PANCHUK: 2133.

EXHIBIT 2133: E-mail dated December 9, 2011, from Nellie Gagné to Nellie Gagné, Subject: ISAV test results, case 2011-261 samples of RNA submitted from Kristi Miller, with 10 attachments

MR. TAYLOR: Those are my questions, thank you.

MR. MARTLAND: Mr. Commissioner, before we move to the next question, I'll just indicate that, for counsel's benefit, our plan would be that with respect to the document that Mr. Taylor had on screen with an abbreviation of the entry, we propose simply substituting in the full version of the text once we can make that available as the proper exhibit. If any counsel has a difficulty, I ask that they speak with me at the break, otherwise I think that's the logical course.

Counsel for the Province is next, with 30 minutes.

MR. TAYLOR: Just on that, I can say that I'm endeavouring to have that full text here before the noon break so counsel can see it and it can be dealt with in the course of this hearing before we close today.

CROSS-EXAMINATION BY MS. CALLAN:

Q Dr. Wright, now, the CFIA, DFO Moncton, and the Province run diagnostic labs. Dr. Kibenge, Dr. Miller and Dr. Nylund run research labs. There's been some discussion about contamination and differences between research and diagnostic labs. Can you discuss the significance of the differences in the operating practices between these two types of laboratories?

DR. WRIGHT: Well, essentially, with diagnostic -- well, you have to have good separation of various activities within the lab, and that's even more critical in a diagnostic lab, because you are obviously putting out results to a client and you want the credibility of those results and the diagnostic accuracy to be the best possible.

I'm not saying that there are quality standards for research labs, and I'm not aware that either of these other labs are running under a research quality standard or not, but nevertheless, in most laboratories that do offer

diagnostic services and research services they try to physically separate them so you don't get any cross-contamination of any -- especially within molecular biology, with any genetic material.

Now, it doesn't matter whether it's a research or diagnostic lab, you want to assure the accuracy of those results and you want to try and prevent, as much as possible, any contamination, because that will give you either an erroneous result for a client, or you will be making erroneous conclusions from your own data.

So, I mean, it's critical in both. But, as we say -- as I've said, that we do operate under a quality standard for testing laboratories and that's ISO 17025, and that's what we are working towards, and that takes into consideration all of the factors, including the training, the environment, and the protocols that are in use.

Q And Dr. Wright, the provincial veterinary diagnostic laboratory is certified by the American Association of Veterinary Laboratory Diagnosticians. Are you familiar with this certification process?

DR. WRIGHT: Yes, I am.

Q Could you summarize the process in relation to the reliability of results from an AAVLD or the American Association of Veterinary Laboratory Diagnosticians --

DR. WRIGHT: Okay.

Q -- certified laboratory?

DR. WRIGHT: Sure. If I may, I'll just call them AAVLD, and within the last seven or so years they have revamped their accreditation program, and what they have done as their base document, they've actually accepted the OIE quality standard for testing laboratories and they've modified it somewhat, because that standard was actually written for laboratories that actually test for infectious diseases, so they've modified it slightly to incorporate other types of testing, you know, toxicology, this type of thing. That standard, the OIE standard, is actually an interpretation of ISO 17025 specifically for veterinary laboratories involved in testing.

So in essence, it's the equivalent to a 17025 without the requirement to have a scope listing every test for every pathogen for every host

species that you're testing. It's broader in terms of scope, it's more general, but in terms of the quality standard, it's essentially 17025.

Q So then you would think that the AAVLD standards are good standards?

DR. WRIGHT: I have no problem with that.

Q Now, Dr. Wright, there's been some question at these hearings about the quality of the diagnostic services provided by the B.C. Animal Health Lab or the provincial lab. Have you worked with the provincial laboratory during an Avian influenza outbreak?

DR. WRIGHT: Yes, I did.

Q Did the B.C. Animal Health Centre provide diagnostic support during the Avian influenza outbreak?

DR. WRIGHT: Yes, they did.

Q Did the work include real-time PCR tests?

DR. WRIGHT: Yes, it did.

Q Can you tell me how many tests they ran per day? Approximations are fine.

DR. WRIGHT: Okay. I would imagine somewhere in the vicinity of 300 or so a day. I can't tell you right off the top of my head.

Q That's no problem. A quantification is fine. Were they able to provide reliable results for the Avian influenza test in the samples provided to them?

DR. WRIGHT: As far as I know we had no problem. They were actually using the assay that was developed at the National Centre for Foreign Animal Disease in Winnipeg, which is where I was at the time, and we did a technology transfer of that assay to John Robinson, as well as a proficiency panel which he had to run, and everything was fine.

Q So their diagnostic services were conducted, then, in your opinion, efficiently and correctly?

DR. WRIGHT: Yes.

Q Okay. Now, Dr. Klotins, I understand that you were involved in the Avian influenza outbreak as well?

DR. KLOTINS: No, I was not.

Q Okay. Was anyone involved in it? Dr. Wright?

DR. WRIGHT: I would just point out at that point in time I was the only one working for CFIA, at that point in time, when the outbreak occurred.

Q Okay. Now, I understand once the -- once there

was a confirmation of the Avian influenza, CFIA took some very serious measures. Can you describe them?

DR. WRIGHT: I don't know if I can describe them in total detail. CFIA, again, this was an emergency response. There were approximately 19 million birds that were at risk. This was a very, very hot virus, it was a virus that was -- it was a one-time major mutation that made it pathogenic. And, of course, there are movement, commercially, of birds at different stages of development before market. So in identifying those farms where there was, you know, high mortality, they declared infected zones and there were buffer zones, there was restriction on movement, and where particular farms were tested and found in addition to the mortality were found to be positive, from a diagnostic perspective, then the animals were actually slaughtered and you had cleaning and disinfection and disposal and basically fighting that whole thing and trying to get ahead of any spread which, as you know, took several months to do.

Q So then, in your opinion, CFIA will take appropriate measures to make sure and contain outbreaks if they are confirmed?

DR. WRIGHT: Definitely. That's one of their major roles, whether it's Avian influenza, whether it's mad cow disease, should we have an outbreak of any other foreign animal disease, that's the preparedness that they have and to act, and our job, in the laboratories, is to make sure that we can actually support them in these measures, and that's why Canada probably has one of the best reputations in terms of the health of our national populations.

Q Now, Dr. Klotins, if a person discovers a reportable disease pursuant to the ***Health of Animals Act***, are they supposed to report it to the CFIA?

DR. KLOTINS: Yes, under the ***Health of Animals Act***, s. 5, they're to notify the nearest veterinary inspector of suspicion or detection of a reportable disease. And then, under - I'm probably going to get the number not quite right - but section, I believe it's, 91 or 92 of the ***Health of Animals Regulations***, if the laboratory

detects an immediately notifiable disease or has suspicion that it may be occurring in Canada, they notify the minister.

Q Now, has the Province demonstrated a history of reporting reportable diseases in a timely manner to the CFIA?

DR. KLOTINS: Yes, any testing that had been done in the B.C. Provincial Laboratory was reported to us.

Q Now, what kinds of due diligence does the Province conduct when they do report a reportable disease? For example, how does Dr. Marty refer reportable diseases to the CFIA?

DR. KLOTINS: As per the directive I sent to commercial laboratories, he was advised to report to the national manager of Disease, Control and Contingency Planning, so he sends a notification to myself, currently, as acting national manager.

Q It's fair, then, to say that the Province does correctly and adequately report when there is an actual real issue that's reportable?

DR. KLOTINS: I would have to say, yes. We've received a number of notifications from them since the regulations came into effect.

Q Now, if I could turn over to Dr. Jones. Now, Dr. Miller's document is an interpretation of sequencing, and it's provincial -- or, sorry, it's Commission Counsel's Tab 139. Mr. Lunn, if we could turn to that. And Dr. Miller has put a little paragraph at the beginning, in the heading, saying [as read]:

> Provincial probes and primers also shown and should pick up these sequences.

Would you agree, then, that if the provincial probes had been used they would have picked this up as well?

DR. JONES: I'm really just reading this in detail for the first time now. I didn't see it until these proceedings began last week. From what I see here, that's a reasonable conclusion.

Q Okay. And just for everyone to be on the same page, this is Exhibit 2062.

Now, you were involved with some of the work with Dr. Molly Kibenge in 2004, which has received some prominence in these proceedings. I understand that her results were quite unusual in

that she conducted testing Pacific salmon using Atlantic ISAV tests which were optimized for farmed Atlantic salmon and not Pacific salmon; is that correct?

DR. JONES: That's correct.

Q And she used a segment 8 test, which resulted in 121 positive results, including 64 Cultus Lake sockeye?

DR. JONES: Approximately, yes.

Q And then she ran samples using a segment 7 marker and couldn't reproduce her results?

DR. JONES: That's correct.

Q Now, when DFO's Moncton lab did RT-PCR tests, they were negative for ISA?

DR. JONES: The Moncton lab tested over 90 Chinook salmon samples, and we know from Molly's work that she anticipated approximately 38 to 40 of those were positive. Those could not be reproduced in the Moncton lab.

Q Okay. And when Dr. Molly Kibenge tried to culture these, the cell tissue tests and the culturing tests were unsuccessful?

DR. JONES: That's correct.

Q Dr. Kibenge also then sequenced some of her results as well?

DR. JONES: We sent 20 samples, as I testified on Friday, to Dr. Fred Kibenge's lab from Chinook salmon samples. Ten of those we'd found to be positive in Molly's hands, and 10 negative. And what Dr. Fred Kibenge found was that of the 10 positive samples he was able to obtain three positive results, and of the negative results we sent from Molly's samples, he was able to obtain, also, three positive samples.

Q So what's the significance of that result?

DR. JONES: Well, the significance was that, in my mind, was that this was more indication of the inconsistency with which some of these assays are able to obtain a positive result. Molly had been unable to reproduce her positive findings with segment 8, in some cases, but certainly with segment 7, and segments 2 and 6, as well, which she couldn't reproduce.

The fact that Dr. Fred Kibenge was unable to reproduce seven of Molly's 10 positives and, at the same time, find evidence of positive samples in three of the 10 negative samples, was further

indication of there being something -- something faulty with the way these assays are being run.

Q Now, Mr. Lunn, if we could turn to page 7 of December 16th's transcript.

MR. LUNN: Actually, I'm sorry, I don't have it available at the moment. I have no outside connection.

MS. CALLAN: Okay. Well, I'll just try to summarize it, then, and put the proposition to you.

Q Now, Dr. Kibenge agreed that the nucleotide sequence of these inserts only had identity to ISAV in the primer sequences but not the intervening section?

DR. JONES: This relates -- I believe you're referring to the Cultus Lake sockeye samples.

Q That's right.

DR. JONES: Yes, that's right.

Q Okay. And Ms. Gagné later testified in redirect, and specifically page 80 of the December 16th transcript between lines 35 and 44, that it was mouse tissue was the closest match?

DR. JONES: I received an e-mail from Molly shortly after she ran those assays, and when she obtained sequence from the intervening segment of DNA between the primer binding sites, that there was a list of top hits that included zebra fish, human, and possibly some other, but certainly not ISA virus. That was not in her list of top hits.

Q Okay. So what is the significance of that?

DR. JONES: Well, it's further evidence that the assay, as it was being used, granted that it was an assay designed for and used in other labs for ISA virus, in this application was producing a result that was not specific, and that could be because of the nature of the primers binding non-specifically, or it could be some other variation of the conditions of the assay that delivered the false result.

Q Okay. Is there anything else that you wanted to give evidence on with respect to the Molly Kibenge paper?

DR. JONES: I don't think so. I think I commented on various aspects of it. I'm still convinced that this paper is not worthy of publication as it's written now. I was hopeful that my co-authors on the paper would have recognized the deficiencies and that together we could have taken some steps to address why these assays appear to be working

inconsistently to include the information that had not been included, and that door is still open.

Q Now, Dr. Wright, would you be able to summarize how a laboratory becomes an OIE designated reference laboratory, and specifically I'm talking about the situation that Dr. Kibenge's lab is in, and this is Dr. Fred Kibenge.

DR. WRIGHT: Well, basically -- well, let me preface it. Most OIE reference laboratory are actually within the Federal Government systems and within their country. Probably 85 to 90 percent of most of these ref labs and OIE collaborating centres are part of the federal infrastructure for veterinary medicine, but there are some that are outside, and we have a few in Canada. Basically, it's a, if you want, it's voluntary. The idea, with these reference laboratories, is they are supposed to assist, as I've said before, those member countries that do not have the laboratory or sometimes the veterinary infrastructure that would be effective in any disease control or prevention of disease in these countries.

So there are a set of terms of reference and there are guidelines that have to be followed in terms of putting together a dossier for consideration by the OIE, and that dossier has to be submitted by the chief veterinary officer of the country. The CVO of the country is actually the delegate to the OIE. So there's a very, whatever it is now, 174 member countries, so the CVOs of each of those countries are the delegates to the international body. And then it will go from there through Dr. Vallat's office, who is the director general, and it will be forwarded down to the appropriate commission. So in Dr. Kibenge's case, this would be the Aquatics Commission, and they would review it. I mean, at that point in time, when he submitted his, it would probably only be reviewed by the commission.

Now, the procedure has been updated somewhat, and that the -- any application for a ref lab or collaborating centre status would also go through the regional commission. I know this all gets complicated, but there's a regional commission for the Americas. So in Dr. Kibenge's case, if it was going through now, it would go to the regional commission and they would make some sort of

judgment call as to whether or not there was a requirement for an OIE ref lab in that region, and we're talking all of the Americas. And then it would go on for technical assessment.

So first it's whether there's a need, and then whether or not they can actually fulfil the technical requirements of an OIE ref lab.

Q Now, does the OIE do site visits or audits to ensure that the designated reference laboratory follows best practices?

DR. WRIGHT: There's no audit *per se* and they're not -- I should point out, OIE is not an accreditation body, we do not accredit laboratories. This is just purely a designation. The only way the OIE has of assessing the activities of the OIE ref labs would be through the annual reports on their activities that they're required to submit every year.

Q Now, does the OIE fund the designated reference laboratories at all?

DR. WRIGHT: No. That's what I'm saying, it's more voluntary, that there's -- there's no funding of the OIE ref lab, itself, although ref labs can apply for funding for things like twinning projects, which I believe Dr. Kibenge has with Chile. But as a laboratory, no, they are not funded. But the OIE does not prevent them for charging for any of their services as they see fit.

Q Now, Dr. Klotins, in the course of your investigation in the recent sockeye salmon PCR test results, did you consider whether farmed Coho in Chile were affected by the 2008 ISA outbreaks?

DR. KLOTINS: Yes, I did, because they're part of the historical information that we have about ISA.

Q And what were your findings?

DR. KLOTINS: Our understanding, from the Chilean Government, is that there have been a fair number of Coho that have been tested for ISAV since the outbreak and even before, and none of them have been positive for ISA.

Q Okay. So these were fish that were in close proximity to the farmed Atlantic salmon that were positive?

DR. KLOTINS: I don't know that -- the answer to that question, but as part of their surveillance report, if they have one, that would probably be

the information in there.
Q Now, Dr. Wright, does this provide evidenced Pacific salmon are resistant to developing the disease ISA, even if they do become infected with the virus?
DR. WRIGHT: Certainly, I mean, that's not in my area of expertise. I don't claim to be an ISA or a salmon expert. Something -- all I can say is that's apparently what I hear.
Q Okay. Now, this question can be to either Dr. Klotins or Dr. Wright. Are you familiar with the OIE requirements for designating a region as having freedom from disease?
DR. KLOTINS: They do provide guidelines.
Q Okay.
DR. KLOTINS: And I have seen those guidelines, yes.
Q For instance, does achieving freedom from ISA status require sampling and testing of thousands of fish using a validated test for ISAV?
DR. KLOTINS: The program is -- it's up to the country to come up with a program, and it does involve testing a fair number of fish over a period of time. Surveillance doesn't have to end. It doesn't have to be a one-time sampling of fish, it can be an ongoing project. And we put together the surveillance plan, as we're doing for salmonids in B.C. and as we have done for testing molluscs on the west coast. And when countries come and evaluate our program this is what we present to them and they either -- they make an assessment of that surveillance plan and either agree to it or not, and in terms of our findings as well for declaration of freedom.
Q And would you say that Canada has been shown to be able to prove that that system is in place?
DR. KLOTINS: Well, it is for oysters and clams on the west coast, and now we are putting together a surveillance plan for salmonids on the west coast. So gradually we'll be having surveillance plans for most of our traded commodity outside -- out of Canada.
MR. STEPHEN: If I could just add for a moment, Canada -- our National Aquatic Animal Health Program has not been audited yet from a foreign country, not fully. We expect - I think Dr. Klotins can speak to it more - but the EU is likely to come next year to do an assessment of our program.

DR. KLOTINS: Yeah, while, there haven't been formal audits while they've come over here, they have requested documentation and we have sent documentation to them, and they provide an assessment on that documentation, and whether they accept our version of the health status of Canada or impose extra conditions.

Q Is there anything else, Dr. Klotins, that you want to mention with respect to the response to the positive preliminary test results from Dr. Kibenge?

DR. KLOTINS: Well, basically, again, I want to reiterate that we had a notification, it was our responsibility -- it's pretty clear, I guess, even from what the panel was discussing last week, that the PCR testing is not a perfect test. We need to gather information to assess whether the results that we're getting are true positives or true negatives, false positives or false negatives, and that is our role and responsibilities to interpret the results of those tests in addition to all the -- the other information that we gather to help us make that interpretation.

MS. CALLAN: Those are my questions. Thank you very much.

MR. MARTLAND: Mr. Commissioner, next we have counsel for the B.C. Salmon Farmers' Association for 30 minutes.

MS. CALLAN: And for the record, it's Tara Callan appearing on behalf of Her Majesty the Queen in Right of the Province of British Columbia.

MR. HOPKINS-UTTER: Good morning, Mr. Commissioner, panellists. I was actually just on my way up here to see if my friend needed any additional time, so I got caught flat-footed.

CROSS-EXAMINATION BY MR. HOPKINS-UTTER:

Q So this morning I'd like to just ask you a couple of overview questions. I don't know if you had all had an opportunity to attend the hearings on the Thursday and Friday. I think, Dr. Klotins, you said you weren't able to. Have you had a chance to review any of the transcripts of the evidence given?

DR. KLOTINS: No, I have not.

Q Dr. Klotins, can I ask if you've reviewed Dr.

Miller's work yet?
DR. KLOTINS: We have -- we have not. We still are deciding how much more information we need to glean, and in that case then we may do a more thorough review of her work or request for information.
Q Request for information. And do I also understand that you're looking at a potential audit of her lab?
DR. KLOTINS: We don't do -- it won't be an audit because we have -- she's not part of our network system, so we have no oversight over the laboratory. It would be more an assessment of whether the PCR methodology is providing the information or the results that were presented.
Q And I understand that Dr. Miller is not a virologist or a diagnostician; is that also your understanding?
DR. KLOTINS: My understanding is that she's a molecular geneticist, yes.
Q So any further work, then, would involve other people with the necessary specialties to interpret her results?
DR. KLOTINS: Whether I need to bring in other people to interpret her results?
Q Yes.
DR. KLOTINS: Is that -- okay. We bring in people that have particular expertise in the test methodology to help us interpret the results, and that's what we did in the case of Dr. Kibenge's results.
Q And at this point, have you determined what those other areas of expertise would be that would be necessary to interpret her results?
DR. KLOTINS: Basically, we would like to use expertise that have specific experience and knowledge of the PCR testing and the various primers that can be developed, the various methodologies that can be used during PCR, and to help us assess -- it's a very technically different, difficult test to run and it requires a lot of checks and balances, and so we need to identify where those areas, where the errors can occur that give results that we are, you know, we may not be expecting.
Q I appreciate you weren't here, but Dr. Are Nylund expressed some concern about stop codon found in some of Dr. Miller's results in ISA segment 7, which I understand is a vital protein to the

virus's survival. Do you have any comment or knowledge of stop codons, yourself, or any of the panel?

DR. KLOTINS: You know, that's not my current expertise. I would need to get an evaluation by somebody who spends a lot of time working with PCR.

Q So from what you've described to me, it sounds like this is going to be an area of research that is long ongoing.

DR. KLOTINS: I think it's going to take a while to work out all the bugs and find out -- and basically validate those tests and find out, you know, what is -- what is the limitation of these tests in terms of sensitivity and specificity and then what that means in terms of how I can interpret it and then design surveillance plans, where we can design surveillance plans that overcome the limitations of the test.

Q So just so I understand, I'm going to summarize in my own, layman's terms; feel free to correct. To confirm ISA, then, you need to isolate a virus, sequence a virus, and culture it; is that correct, more or less, or what are the prerequisites to confirming?

DR. KLOTINS: Yeah. It depends on whether the initial notification was dealing with diseased animals or apparently healthy animals. Certainly, in our case, well, in both cases, really, with the diseased animals we -- our work is to have it cultured first. You should be able to culture it and then identify the virus using another test. In our example, we used the PCR test to identify what virus has been isolated. So we use a combination of -- we have the clinical signs that are consistent with ISAV. There may be other information that was -- can be provided by veterinarians or other laboratories that have done other work, for example, histopathology, that could support other findings.

We would then do the culture in our laboratory and identify the virus, and that would be a confirmed case. And it would have to be consistent in most of the animals that we're testing.

Q And I understand that that is not the case, then?

DR. KLOTINS: These were not diseased animals, at least

with clinical signs consistent with ISAV. So in this instance, it was apparently health populations except for the last population tested by Kristi Miller of the Chinook salmon, but those signs were not consistent with ISAV as well. So we still have more work to do, more information to gather on those.

But in cases of healthy populations, people tend to do screening tests first and to identify positive animals, which then would have to be, under our confirmation protocol we would need to isolate the virus and identify what it is to report.

ISA is a little bit troublesome because there are -- there may be a strain that is considered non-pathogenic, and we're still working on how we would confirm that testing. And that testing is also -- the standards for testing for that particular strain is still being worked out with the OIE as well.

Q You did say, though, that Miller's results are not consistent with ISA?

DR. KLOTINS: Basically, she was having the same issues with reproducibility of those results. But I was talking about the clinical signs were not consistent, and that portion of the research project was conducted by Dr. Sonja Saksida in describing the clinical signs.

Q Now, I understand that Miller's techniques are relatively new or novel in terms of this type of testing?

DR. KLOTINS: I would say yes, because I have not seen that reported in the literature. Peter, have you seen fluidics?

DR. WRIGHT: Not with diagnostic application, no.

Q So then do you believe it's too early to be speculating on what her results could mean? I'll open that to anyone on the panel.

DR. WRIGHT: No, I agree that it is too early. And in terms of incorporating any new methodology like this into a diagnostic regime would, of course, require that there be a thorough analytical and diagnostic workup, and none of that's happened, and it doesn't happen overnight. So that all has to be done.

I would just point out, when you first mentioned isolation versus culture, that they're

one in the same, you isolate the virus in the cell culture and, as Dr. Klotins said, as it is with most pathogens, you would dearly love to get it in a cell culture, if it's a virus. But there are some viral pathogens out there for which there are no cell lines, crustaceans being a case in point; there aren't many cell lines for many of those. And for some viruses there are genotypes that are non-pathogenic, and that does present a diagnostic problem, because you cannot isolate it. You don't have susceptible cell lines or it's just not pathogenic, so therefore you have to come up with other validated methods, and it's usually a molecular method or detection right in the tissue with, you know, electron microscopy or, you know, fluorescents, various things.

So it's not all cut and dry. And any new protocol that comes in, if you think of something like the ELISA, which is for antibody detection that's now fairly commonplace, that took almost 20 years to get it to a point of international standardization where it became an accepted tool. And the PCR techniques are still much younger than that, and technologically they're changing every day. So to get them to a point where they're internationally standardized is going to be long past my retirement.

Q So it's a little too early, then, to be running to the newspapers with this, in your view?

DR. WRIGHT: At this point, especially if you're changing up the techniques and you're going further and further into analytical sensitivity down to a point where it's very difficult to make a diagnostic interpretation, you have to be extremely careful on any conclusions that you draw from it. In many cases, if you go too analytically sensitive, you get yourself into a world of hurt, because the actual interpretation, it just exponentially becomes far more difficult in terms of, you know, interpreting with respect to disease. I mean, there's pathogens everywhere. They don't all cause diseases.

Q I understand we had some evidence earlier on, the number of pathogens, I think, was something like if you were to connect them all together it would extend beyond the moon, or several billion blue whales. Is that really the types of volumes that

we're looking at in the world's oceans?
DR. WRIGHT: I certainly couldn't tell you.
Q Quite all right. Doctor, I'd like to actually stay with you on this. You were talking about the OIE reference lab designation a little earlier. You said that this was voluntary and that there was a change in standards between the time -- sorry, not the standards, but the process to become an OIE reference lab between the time that Dr. Kibenge's lab became an OIE lab versus now.
Can you just confirm what you said, that at that time there was no audit process that was required to become an OIE lab?
DR. WRIGHT: Well, I mean, there's still no audit process. That part hasn't changed. But basically what they're doing, now is there's a movement to, if you want, increase the quality requirements of these labs. If you look at the terms of reference, basically they say, you know, "will conduct tests on behalf of member countries," but more and more, I mean, there's been two global meetings of the ref labs, these are held four years apart and there was one just in 2010, and the OIE is setting more stringent standards.
So, you know, whether it's a new laboratory applying for designation or whether it's an existing laboratory, they're going to have to comply with things like there's an expectation that they will have ISO accreditation or equivalent, and with that will ensure the proper separation of activities and the traceability and the chain of custody and everything else that goes with it, especially if they're both research and diagnostic and keeping those two activities totally apart, that they will have to comply with all the guidelines for biosafety and biosecurity in these labs, the guidelines with respect to management of data in these laboratories.
So really, they're coming up -- they're basically saying, there, the ref labs are, in this world and this day and age, are going to have to comply with more stringent guidelines and standards than they have before.
Q The ISO certification, is that the same one that Dr. Nellie Gagné's lab is apparently pursuing?
DR. WRIGHT: We're working towards that one. If you could just stop the music and -- I mean, there's

almost 235-some-odd requirements that have to be fulfilled for 17025 in order to be audited by the Standards Council of Canada. In a working laboratory, if you could stop the merry-go-round and spend a year just writing all of those SOPs and supporting documents that are required, it would make life much easier, but you can't. And then, on top of that, especially with the Gulf Fisheries Centres, we've undergone some major laboratory renovations, again, to try and separate all these activities that we were running on less than ideal before doing our best, but now we've actually split them out much more efficiently.

I mean, I would point out that the PBS laboratory under NAAHP will be undergoing a third-party audit before the end of this fiscal year. They're a little further ahead of the curve on this.

Q Now, did you say ISO 17025? Is that the same one that the Association of Veterinary and Laboratory Diagnosticians is currently running? Is it a parallel or they satisfy those requirements?

DR. WRIGHT: Well, basically any laboratory, whether in the States or in Canada, can apply for either -- either/or, but many of them are going with the AAVLD only because it has a much more lenient scope of testing. You can go with the Standards Council of Canada. It's a bit more expensive. And certainly for some of the provincial labs that run many, many assays, they may have 90 to 100, 120 assays in their repertoire, putting all those into a scope document and having to pay for every single one of them becomes really inhibitory because of the amount of money you would have to put out to get that accreditation is just phenomenal.

But there is work being done to try and make the scope more flexible and make it broader and more applicable without killing the bank. The AAVLD has sort of an unlimited scope to it. But the principles and the guidelines that are within that standard are all the same. They're all an interpretation of 17025.

Q Just bear with me one moment. So then, to the best of your knowledge, was the - I keep coming back to the word "audit"; maybe you can correct me on that term - but the audit that was done of

Dr. Kibenge's lab in comparison with the Moncton lab, to the best of your knowledge, then, would that have been the first time Dr. Kibenge's lab was audited?

DR. WRIGHT: Well, again, we haven't used the word "audit" because it's not an audit. We're not -- CFIA doesn't do audits in that sense.

Q "Reviewed," then.

DR. WRIGHT: It's an assessment. And basically what the idea was in going in was to -- it was trying to reconcile why we were seeing these differences between the Moncton lab and Dr. Kibenge's lab. So it's looking at the protocol, itself. And then, of course, because there's -- there are other variables in any quality system beyond the training of the staff, the environment that you're working in, what are your biosecurity measures, you know, and everything that goes into the protocol, itself, basically they were assessing all of that in both of the labs.

Q So the OIE, you said, is now increasing its standard, so if it hadn't done a review of Dr. Kibenge's lab beforehand, it will likely do so in the future with others?

DR. WRIGHT: No, they don't -- they don't audit and they won't audit. They may, as a requirement, say, down the road, and they will certainly give the reference laboratories and, where applicable, the collaborating centres, enough time to achieve it, but they may, you know, lay down the requirement that you have to have 17025 or equivalent and we'll give you two years, three years, four years in order to do that, and if you're not going to comply with what their requirements are, then you would have to -- they would withdraw the designation. That hasn't happened yet, but that's the way the world is going and there's a lot of discussion about that. And basically they're just trying to bring the quality up, because these labs are supposed to be providing services to member countries within their region.

MR. HOPKINS-UTTER: Thank you very much, panellists. Mr. Commissioner, I note the time. I actually have completed my questions. Thank you very much, panellists. Thank you, Mr. Commissioner.

MR. MARTLAND: Yes, Mr. Commissioner, we can move to

break. If I'm able to suggest a short break, it's not absolutely vital, but it's helpful if we can do that. Thank you.

MS. PANCHUK: The hearing will recess for 10 minutes. Please remain standing in place while the Commissioner exits the room.

(PROCEEDINGS ADJOURNED FOR MORNING RECESS)
(PROCEEDINGS RECONVENED)

MS. PANCHUK: The hearing is now resumed.

MR. MARTLAND: Mr. Commissioner, just so the record reflects that it was Shane Hopkins-Utter who appeared as counsel for BCSFA for their examination today. I have counsel for Aquaculture Coalition with 30 minutes. Subject to donations, I suppose, that may be adjusted. Thank you.

MR. McDADE: Thank you, Mr. Commissioner. My name is Gregory McDade. I am counsel for the Aquaculture Coalition.

CROSS-EXAMINATION BY MR. McDADE:

Q Let me just start with a few questions around timing and government response. So I think probably, Mr. Stephen and Dr. Klotins, these will be questions for you. As I understand it, Dr. Kibenge discovered the first positive results in the 48 salmon he tested on October 15th, 2011 and reported it to CFIA on that date; is that correct, Dr. Klotins?

DR. KLOTINS: Yes, he did report it to the CFIA on October 15th. In subsequent emails we discovered that he actually had initial positive tests on October the 9th that he did report to the clients.

Q All right. So the government's first awareness of this was October 14th. Mr. Stephen, was --

DR. KLOTINS: October 15th, yes.

Q October 15th. Was DFO aware of it at that time?

MR. STEPHEN: No, and I wouldn't expect to be. CFIA is an organization that was supposed to be receiving notification.

Q So when did DFO first find out about these positive results?

MR. STEPHEN: On Monday, the 17th of October.

Q When there was a press conference by Dr. Routledge and SFU, is that...

MR. STEPHEN: I don't know about that, no.
Q Dr. Klotins, did you do anything around the fact that there was now a positive test from the OIE reference laboratory indicating that ISAV may be present in wild salmon. What did -- did you make any public statements? Did you notify anybody? And by "you" I mean the CFIA.
DR. KLOTINS: Yes. So initially we had an internal meeting, and I also talked to Dr. Kibenge to find out his opinion of the results and whether he thought they could actually be false positives. We had a meeting to outline how we were going to proceed on this investigation, and as part of that meeting we determined we needed to assess whether we should notify the OIE, and whether -- and then who are our major trading partners for wild salmon in B.C. and for farmed salmon, and notify our specific trading partners, and also that, you know, purchase, that we export our salmon to. And we also notified the -- well, we prepared to notify the CVOs of the various provinces and representatives of the Canadian Council of Aquaculture and Fishery Ministers in Canada.
Q Well, let me just take you back to this. You said you had a meeting to determine whether you were going to do those things. May I suggest to you that you didn't do any of those things until after this was made public on October 17th.
DR. KLOTINS: I have to disagree. Well, I can't -- I can't point to the exact time when that news report came out. But we were -- we had started our disease response, and had some initial meetings in deciding how we were going to proceed.
Q Between the 15th and the 17th you had done that?
DR. KLOTINS: It was on the morning of the 17th.
Q Doctor, when you talked to Dr. Kibenge, he told you that in his opinion these were positives?
DR. KLOTINS: I asked him in terms of what his cut-off points were for positive results, and he provided those for me, and he thought they were positive. What he didn't provide was the fact that those results were not repeatable.
Q He didn't tell you that. He just told you they were positive.
DR. KLOTINS: Yeah.
Q So in your view, as of October 15th following your conversation with Dr. Kibenge, you had verifiable

positive results.
DR. KLOTINS: We did not have verifiable positive results. We had a positive test result.
Q And you had no reason to -- at that point you had no reason to believe there was anything wrong with it at all?
DR. KLOTINS: Actually, we were very suspicious because the -- number (1) it was identified in a species that we had never seen it before. So we didn't expect a prevalence of four percent, which is what he got as two out of 50 being tested positive. So we were already wondering if the results were actually true positives.
Q But there was nothing you learned from Dr. Kibenge that would support that, as far as you were -- as far as he was concerned, these were clear positives and that's all you knew at that point.
DR. KLOTINS: On October the 17th.
Q Yes.
DR. KLOTINS: Yes, October 17th.
Q Now, can I suggest to you that CFIA would not have gone public with these results if Dr. Routledge at SFU had not?
DR. KLOTINS: Well, we didn't go public with the results right away, either. We started our investigation and I believe we went public -- I can't remember exactly when we did our first public notice, but we did notify our trading partners and we did notify governments in Canada.
Q You would not have gone public for many months if this had not been reported in the media, would you?
DR. KLOTINS: I can't answer to that.
Q You can't say?
DR. KLOTINS: No.
MR. STEPHEN: I'd like to answer that, please. I've been working in regulatory reporting and surveillance for 20 years here in Canada, fish inspection and marine toxin monitoring was my responsibility here, both at Fisheries and Oceans and the CFIA. I've also been responsible for drug residue testing, environmental contaminants testing, and most recently from our laboratory side of this program on aquatic animal health. The Government of Canada does not routinely report presumptive or preliminary results until we can confirm those results.

Q So the answer to that is, Mr. Stephen, is you would not have gone public either at DFO?
MR. STEPHEN: It would be CFIA's responsibility to do the reporting, but again we do not report presumptive results. We have to confirm those results first.
Q And that can take months; is that right?
DR. KLOTINS: It's possible.
Q Well, and, Dr. Klotins, as I understood your testimony on Friday, there was no way that these samples could ever be confirmed because you had chain of custody issues.
DR. KLOTINS: Correct.
Q So these would never have been more than presumptive positives, no matter what.
DR. KLOTINS: This particular event, yes.
Q All right. So the Canadian public would not have known about this but for SFU.
DR. KLOTINS: At some point we do report on our investigations, but it is possible the Canadian public would not have known.
Q And if a new disease came forward, something like HSMI, discovered by a researcher at a university, the same result would occur at CFIA; is that a fair statement? No one would ever know until you could do confirmatory testing yourself.
DR. KLOTINS: That particular disease is not a reportable disease. It would be a new -- possibly a new emerging disease. That is not -- it's not notifiable to CFIA, and whether we would do any more investigation on that disease would depend on degree of mortality and how many fish populations were being affected.
Q Mr. Stephen, what is DFO doing about the report of HSMI in the Clayquot Sound fish farm?
MR. STEPHEN: I don't -- I'm not aware of DFO doing anything at the moment. I only learned of Dr. Miller's results when she forwarded them to the Commission on last Tuesday. I have not had any communication with anybody based on that disease at the moment.
Q So it's now been almost a week and there's nothing at all happening at DFO?
MR. STEPHEN: I didn't say that. I said I wasn't aware of anything being done. I'm here, sir.
Q All right. Let's move on in the timeline. So October 17th there was a press release and that

caused some -- some action. My understanding is that there was a second set of samples that Dr. Kibenge reported to CFIA, and these were actually fish from the Fraser River system, the Harrison -- the Weaver Creek and Harrison Mills fish, and that that report took place on October 20th; is that correct, Dr. Klotins?

DR. KLOTINS: No, it is not. He actually informed us on the afternoon of October 17th that he had received samples from that area.

Q So you knew as of October 17th he was testing. When did you know that he was getting positive results from them?

DR. KLOTINS: On October the 20th.

Q Right. So he issued you a written report that he had positive results on October 20th.

DR. KLOTINS: No, he did not. He provided a verbal report.

Q All right. So as of October 21st, CFIA was aware that there were positive tests for ISAV in the Fraser River system, that's correct?

DR. KLOTINS: Well, we identified -- he gave us the impression that they were from Weaver Creek, and we needed to contact the submitter of the samples to confirm the location.

Q And that was Dr. Morton?

DR. KLOTINS: Yes.

Q And so can I have Exhibit 2028 up on the screen. Now, this is a statement from DFO, Mr. Stephen. You were aware at the time that this statement was issued that there had been positive tests found in the Fraser River system?

MR. STEPHEN: I was aware that there were preliminary results that indicated there was ISA, yes.

Q Why is there no mention in this DFO statement about the Fraser River fish?

MR. STEPHEN: Because we do not report, as I mentioned earlier, preliminary results. The results have to be confirmed through our national reference laboratory, and my understanding as of this date there were none of those tests, and as of this date today, none of those tests have been confirmed form our national reference laboratory.

Q But this was a statement about 48 fish that were in exactly the same situation, presumptive positives, unconfirmed. So you were prepared to talk to the public about those 48, but you didn't

mention a word about the Fraser River fish. Why not?
MR. STEPHEN: Because we had completed our analysis of these samples. We were requiring an analysis of those samples because those were made public. Yes. But we didn't make them public. We would not report on any presumptive positives.
Q I suggest -- well, let me go back. When Dr. Kibenge reported to you the positive tests, Dr. Klotins, did you tell him not to issue a report to Dr. Miller -- or Morton, sorry.
DR. KLOTINS: No, I did not.
Q He didn't report his results to the person who had submitted his test for over a week. Are you aware of that?
DR. KLOTINS: Well, it's up to him to decide when he's going to report to his client. As far -- and I don't know how long it takes him to complete his testing and then issue his report.
Q Are you saying that you didn't discourage him from doing that?
DR. KLOTINS: No.
Q Mr. Stephen, the reports on October 17th caused a great deal of public interest in the question of ISAV, and is that correct?
MR. STEPHEN: I would agree, based on the media, that it did, yes.
Q And you did -- this didn't change your decision not to report the Fraser River results at all?
MR. STEPHEN: CFIA is responsible for the investigation of reportable diseases in Canada. We assist them in providing laboratory diagnostic confirmation of any of those suspected positives.
Q Can I have Exhibit 2089 up on the screen. This was on November 9th both the federal Minister of Fisheries and the B.C. Minister of Agriculture issued a joint statement. You were involved in that, weren't you, Mr. Stephen?
MR. STEPHEN: I provided some input to the document, yes.
Q And you were briefing the Minister's office in terms of what was happening in this investigation?
MR. STEPHEN: I was at times, yes.
Q And had you advised them Minister's office that there were positive results for the Fraser River?
MR. STEPHEN: The Minister's office was advised that there was presumptive results on all the tests

that we were aware of.
Q So when this -- could we highlight the third and -- or the fourth and fifth paragraph, please. So when the federal Minister and the provincial Minister were issuing this report to the Canadian public, your Minister at least was aware that ISAV had been found in the Fraser River?
MR. STEPHEN: I repeat that presumptive results were available to us and we were continuing with our testing to try and confirm those results.
Q And when the provincial Minister referred to "reckless allegations", he was aware that the OIE office had found positive results in at least two sets of salmon?
MR. STEPHEN: I can't speak to what the provincial Minister had to say or did have any knowledge of.
Q Well, you'd seen this press release before it was released, hadn't you?
MR. STEPHEN: I had seen a version of it, yes.
Q So that would be a pretty misleading statement, "reckless allegations", wouldn't it?
MR. STEPHEN: I can't speak to that. As I said, I had no input into Minister McRae's comments here.
Q All right. Can we have Exhibit 2029 on the screen. You saw this, Mr. Stephen, you were aware of this statement before it was released?
MR. STEPHEN: I saw a version of it, yes.
Q Dr. Klotins, you saw a version of it?
DR. KLOTINS: Yes, a version of it.
Q In the fourth paragraph, it says that:

> DFO has tested all 48 samples...and the results are all negative for the virus.

Is that a correct statement, Mr. Stephen?
MR. STEPHEN: I think Dr. Wright might be able to provide a better answer to that than I.
Q Well, before Dr. Wright answers, I want to know what your views were.
MR. STEPHEN: I was advised by our laboratories, yes, that was a correct statement.
Q That's Nellie Gagné's laboratory?
MR. STEPHEN: That's correct.
Q Now, you heard her testify, didn't you?
MR. STEPHEN: I did.
Q And you heard her testify that her statements were not negative, they were inconclusive because there

wasn't enough RNA present to be able to make a conclusive statement; isn't that right?

MR. STEPHEN: I'm not sure I recall that exactly, no. I heard a lot of testimony in a day and a half.

Q Well, let me suggest to you that she agreed that without some qualification that would be misleading, the qualification being that the results were too degraded to be able to test. Before you answer, Dr. Klotins, I want Mr. Stephen's answer on this.

MR. STEPHEN: Could you repeat the question, please.

Q I understood her evidence to be that the samples were so degraded that she couldn't say that they were negative, that they were inconclusive, and further that she would have expected a statement to that effect in the release, otherwise it would be misleading. What's your view on that?

MR. STEPHEN: On my understanding from the information I was provided that those samples were negative.

Q You didn't know that they were inconclusive.

MR. STEPHEN: I knew that some samples were inconclusive based on degradation of other materials, the 299 fish that were collected from Dr. Routledge. But I wasn't aware that these particular ones were degraded to that level, no.

Q The next statement says:

> These results are consistent with the findings of an independent laboratory in Norway...

Now, did you hear Dr. Nylund testify that he found positives?

MR. STEPHEN: I did.

Q Doesn't the word "consistent" there mean they're all negative? How is a positive from him consistent with negatives from the other?

MR. STEPHEN: I don't know.

Q All right. Do you agree that's very misleading, isn't it?

MR. STEPHEN: I wouldn't say it's misleading. I said I don't know who put that comment in there.

Q Dr. Klotins, do you know?

DR. KLOTINS: That would have been an assessment by the CFIA, an assessment of all the information we had gathered to date, an assessment of whether those findings were true positives or false positives,

and also in terms of the negative testing, how confident we could feel in that.

Q Let me go back to the question of the Fraser River fish. Do you not see that issuing this statement when you're fully aware that there are positives also in the Fraser River it's misleading to the Canadian public?

DR. KLOTINS: I have to disagree, as I said, we do the interpretation of the test results. We know the PCR test is not a perfect test. Indeed, in some of those 48 samples of the kidneys that we obtained from Dr. Miller's lab, those were in good condition and they did test negative. And the gills were variable results. In terms of Dr. Nylund's results, he could not replicate his findings, and we considered them negative at this time.

Q You defined them as negative, but --

DR. KLOTINS: Yes.

Q You were fully aware when this statement was put in that Dr. Nylund would not have said that they were consistent with a statement that they were all negative?

DR. KLOTINS: Dr. Nylund reports on the ability of his -- of the test or his testing results as they were done in the laboratory. After laboratory tests are done, then the interpretation of the test results are -- need to be evaluated, and it's done by -- in our case, by the CFIA, as we are legislated to make that determination. So even in veterinary medicine, when we get test results it is not the laboratory that makes the determination of the disease or not. They tell us under their protocols they believe the tests are positive or inconclusive and then the clinician makes the decision, the interpretation on what those test results actually mean to the patient.

MR. McDADE: Could I have Aquaculture Tab 59. Mr. Stephen, you were present at a press conference, and so were you, Dr. Wright, on November 8th, 2011. And this document is a transcription of that news conference. Can I just ask that that be made the next exhibit?

MR. MARTLAND: We think it is an exhibit, and in a moment I may be able to provide you with what we understand the exhibit number to be. It will be on Commission's list of documents. It should be

Exhibit 2030.
MR. McDADE: Perhaps we can have Exhibit 2030 up. Yes, thank you, it appears the same.
Q Mr. Stephen, when you gave this press conference, you were aware of the positives that had been found in the Fraser River fish?
MR. STEPHEN: I'll repeat that I was aware or presumptive positives. We had not confirmed that international reference laboratory.
Q You chose not to share that with the media?
MR. STEPHEN: I'll repeat that we don't share presumptive positives in the normal course of business, no.
Q Could we have Exhibit 2101 on the screen. It's an email that you looked at on Friday, Dr. Klotins. It's dated October 19th, 2011 at 3:35. The subject of this email is Dr. Kibenge's laboratory. Is it correct that as of October 19th, 2011, CFIA had already determined that one of the reactions it was going to have to this finding of positive results is to go and check Dr. Kibenge's lab?
DR. KLOTINS: Yes. It was one of the options on the table that we would ascertain, try to get some more information to help make a determination whether the results he got on the PCR test are true positives or false positives.
Q No, I didn't ask you if you were going to confirm his results. What I said was you were going to go and attack his credibility, the credibility of his lab. You were going to go and check his lab, weren't you?
DR. KLOTINS: I disagree.
Q You weren't going to go check his lab. That isn't what this email says?
DR. KLOTINS: No, it --
MR. MARTLAND: Mr. Commissioner, in fairness to the witness, there are two different propositions there. One is attacking credibility, one is looking at the lab. And so perhaps in fairness to the witness, those could be asked in two parts.
MR. McDADE:
Q Well, let me put it in the nicest possible way. You were going to go check the credibility of his lab?
DR. KLOTINS: We were going to go check the methodology, the PCR methodology.
Q You weren't going to go -- well, we've seen a

document. Some people have referred to it as an audit. I guess that's not the correct assumption. It's an attack on his lab's credibility, isn't it?

DR. KLOTINS: I disagree.

Q Already as of October 19th, that's within a couple of days of you having your first meetings to talk about what to do with this, you were going to go look at his lab's compliance. I think that's the term used in the email.

DR. KLOTINS: You mean the compliance with the biosecurity, the biocontainment? Is that what you're referring to?

Q Well, the email speaks for itself. I'll move forward.

Dr. Kibenge had the temerity to announce positive test results and the result his lab is being analyzed by you. That's the outcome of all of this, isn't it.

DR. KLOTINS: Yes, the PCR methodology is being investigated.

Q And, Mr. Stephen, I suggest to you that the federal government is going to try and take away his OIE certification as a punishment for this; is that right? That's what you're going to do, isn't it?

MR. STEPHEN: I have no authority to do anything about his OIE certification.

Q I predict within the next 12 months Canada will go after his credibility; isn't that right?

MR. STEPHEN: I disagree.

Q Could we have Exhibit 2026 on the screen, please. While that's coming up, let me say the same thing, Dr. Klotins. You're also now going after Dr. Miller's lab and her methodology, aren't you?

DR. KLOTINS: We will be assessing the methodology so we can get some idea of whether the results are true positives or false positives. And that hasn't been decided yet whether we're going to do or not.

Q This was a press release issued by the CFIA on October 21st, the day after you found out about the Fraser River samples. Again, no mention of the Fraser river samples in there, is there.

DR. KLOTINS: No.

Q Now, it says in the second paragraph:

Federal officials are working closely with

the Atlantic Veterinary College, which conducted initial testing.

DR. KLOTINS: Yes.
Q Cooperatively, you would say?
DR. KLOTINS: And it was cooperative. In terms of we did talk to Dr. Kibenge whether there were any samples left from the 48 fish that we could corroborate his findings. We also asked that with the subsequent fish that he tested that were submitted by Alexander Morton, and he did provide us with the homogenates, so we could do some corroborative testing.
Q So what work was he doing to assist you basically other than you taking away his samples completely from him, how did he work closely with you?
DR. KLOTINS: So the other way he worked closely with us is to provide us with information on how he performed the testing and on the PCR methodology itself in terms of assessing whether it was a true positive or a false positive. I should also mention that I did invite Dr. Kibenge to be part of a network laboratory for the NAAHP, and so he could -- if he was interested, he could provide testing for the National Aquatic Animal Health Program.
Q When did you do that?
DR. KLOTINS: I did that, actually I'll have to check my notes, but I believe it was on the 19th, or it could have been on the 18th. I can't quite remember. I had a number of conversations with him over the couple of days.
Q Could we put up Exhibit 2104, please. Dr. Klotins, the other -- before we get to that exhibit, the other thing you did very shortly after the press conference on October 17th was to go out and seize all of Dr. Routledge's samples, right?
DR. KLOTINS: It was not seizure. It was a request for samples that we needed to help conduct our investigation.
Q You took all of his samples away from him, right?
DR. KLOTINS: No, not all of his samples. He had samples from 2009, 2010 and 2011. They were put under quarantine, and we did take all of his samples from 2011 to -- and sent them to Moncton.
Q Now, quarantine is, as a layperson understands it,

is you put something in place so that it can't go in contact, in the case of humans, other people.
DR. KLOTINS: Yes. So in the case -- oh, sorry.
Q So let me finish this question. He had frozen fish sitting in the lab. You put it under a quarantine order. Were you afraid that it was going to out and contact other fishes?
DR. KLOTINS: The reason we put it under quarantine is to assist with our investigation, so those samples would be available if we needed them for further testing.
Q you took all -- but you took all of his 2011 samples.
DR. KLOTINS: Yes, we did, and we sent it to Moncton.
Q And you've not given them back.
DR. KLOTINS: We're currently --
Q Just answer the question, have you given them back?
DR. KLOTINS: Not yet at this date, and nor have we --
Q Are you going to give them back?
DR. KLOTINS: That determination is still to be made. We've completed the documentation and a veterinary inspector will make the decision whether to return them or not.
Q Well, and you're going to decide not to give them back, aren't you?
DR. KLOTINS: I'm not --
Q So that no person will ever be able to test these samples other than you. That's seizure, by my definition.
DR. KLOTINS: No, I have not told you that we're not going to give them back.
Q No, you're going to make that decision after the Commission stops hearing testimony, aren't you?
DR. KLOTINS: No.
Q He's requested them back?
DR. KLOTINS: Mm-hmm.
Q Dr. Morton's requested her samples back?
DR. KLOTINS: Well, what happened there was she requested the samples back, but it was unclear which ones she wanted back, so we have requested further information because --
Q You've only got one -- let me just -- hold on. She only gave you one set of samples. How could it be unclear when she asked for samples back?
DR. KLOTINS: Actually there were more than one set of samples, possibly, and that's not clear. Because

there was some indication that she was involved with the 48 samples that were part of Dr. Routledge's samples, and then there were the samples that came from Harrison Creek and Weaver Creek. And those specimens were entirely homogenized by Dr. Kibenge, and -- and that's what we received from Dr. Kibenge was the homogenates. So not the initial samples from Dr. Morton.

Q So let me just get clear in real terms what happened. Once this report was made --

DR. KLOTINS: Mm-hmm.

Q -- CFIA swept in and took everything Dr. Kibenge had, all the 2011 samples from Dr. Routledge, and eventually all of the samples from Dr. Morton, and hasn't shared it with anyone else since. Is that a correct statement?

DR. KLOTINS: That is correct.

Q Now, let's come to the November 4th email. And you gave testimony about this on Friday, and I didn't really understand your answer so I'd like to explore it again. According to this email, you were thinking at that time of prohibiting or advising labs in Canada that the CFIA did not want them to test any more wild fish. Now, why were you thinking that? Why was that a response to a positive finding?

DR. KLOTINS: It was an option I put forward, basically because we could not confirm chain of custody, and it would -- it would be more of the same where we couldn't confirm results. And we already knew we were going to come out with a surveillance plan.

Q So what you're really saying is we don't want any more citizens testing fish. We want to be the only ones doing it.

DR. KLOTINS: We wanted to provide the oversight on that testing, yes, because we are by legislation the final arbiter of fish health status in Canada.

Q So let me just understand this chain of custody. By your definition, if anybody else samples for these fish, you don't have -- you've got chain of custody issues?

DR. KLOTINS: Yes. If they're not under oversight of CFIA.

Q And the only way you can get proper samples, then, is if CFIA samples.

DR. KLOTINS: Or we contract the sampling, but we provide the oversight.

Q But you're not presently sampling.
DR. KLOTINS: We're not presently sampling. We've got a surveillance plan under development.
Q And you never sampled wild fish before this date?
DR. KLOTINS: No.
Q So as I understand your rationale, we're in a little bit of a Catch-22. Only things we sample will meet our test, and we're not going to sample anything. Isn't that the situation as of October 2011?
DR. KLOTINS: October 2011? That was October 2011, but now we're in December 2011, and I don't agree with your statement.
Q All right. Well, as of October 2011, there was no sampling program for wild salmon in place by CFIA, was there?
DR. KLOTINS: Not at that time.
Q And when this -- when this memo was made by you --
DR. KLOTINS: Mm-hmm.
Q -- you were thinking about prohibiting other labs from sampling, from testing any samples by any other person other than you?
DR. KLOTINS: It wasn't a full-out prohibition. It was an advisement. And it was just an option that was not accepted.
Q Right. But you weren't -- you as the national manager --
DR. KLOTINS: Mm-hmm.
Q -- were actually contemplating that.
DR. KLOTINS: Yes.
Q And then you found out you don't have the power to do it.
DR. KLOTINS: I did not determine whether I had power to do it or not.
Q I thought you just told me that you don't have the power to do it.
DR. KLOTINS: No, I didn't say that.
Q Oh, all right.
MR. STEPHEN: Mr. Commissioner, I'd just like to point out that DFO has been testing wild fish in B.C. It may not be as comprehensive in scope as the surveillance plan that CFIA is developing now in consultation with us and others, but there has been testing of wild salmon in B.C.
Q For ISA, Mr. Stephen, there's been testing of wild salmon?
MR. STEPHEN: Yes, that's right.

Q When?
MR. STEPHEN: Our Pacific Biological Station, Nanaimo lab has been testing this year.
Q When? You mean Dr. Miller's testing?
MR. STEPHEN: No, not Dr. Miller's testing.
Q Whose testing?
MR. STEPHEN: The National Aquatic Animal Health Program laboratory in Nanaimo.
Q Before October 2011 for ISA.
MR. STEPHEN: Yes.
Q Who has been doing that testing?
MR. STEPHEN: I believe Dr. Kyle Garver from our National Aquatic Animal Health Program laboratory.
Q Prior to 2010 there had never been any testing by the federal government; isn't that right?
MR. STEPHEN: I'm not aware of it, but I can't speak to -- to what the Pacific Station has been doing prior to this year.
Q Well, except for 2004, 2004, the Pacific Biological Station did test wild fish for ISA, right?
MR. STEPHEN: There was a post-doctoral research project that's been reported on here already, yes.
Q And it found ISAV, at least in the opinion of the researcher, right?
MR. STEPHEN: I believe there's testimony been heard on that question, yes.
Q And you were aware of that.
MR. STEPHEN: I wasn't at DFO in 2004. I was at CFIA.
Q Yes, all right. Dr. Wright, were you aware prior to 2011 that that had been -- that ISAV had been found at the Pacific Biological Station?
DR. WRIGHT: No, I wasn't.
Q All right. Let's turn to you, Dr. --
DR. WRIGHT: And I would just point out I wasn't working for DFO at that point, either.
Q Well, let's find out who you told, Dr. Jones. You were aware of it in 2004 and 2005 and 2006. Did you advise your superiors of that?
DR. JONES: That I was aware of exactly what?
Q Well, that Dr. Molly Kibenge had found ISAV in wild salmon.
DR. JONES: Dr. Molly Kibenge had some PCR results that suggested the possibility that the virus is present.
Q Yes. Well, let's not -- let's not get too deeply into the niceties. She had certain findings.

DR. JONES: Mm-hmm.
Q Did you pass those up the chain of command?
DR. JONES: I did. My colleague, Garth Traxler, a virologist, was aware and a participant in this research. And the manager of our diagnostic laboratory, who managed the ***Fish Health Protection Regulations*** in the lab was also aware of these findings.
Q Well, then when this -- when ISAV began to become somewhat controversial, and during the Cohen Commission hearings, you discussed those with your superiors at DFO?
DR. JONES: Well, certainly after mid-October, we discussed the earlier findings and it was obviously relevant that the documents be included at that point.
Q So when was -- why hadn't you reported this -- these reports to the Commission any earlier?
DR. JONES: Well, it's as I gave evidence last week on Friday that the findings were deemed to be not a positive finding. We were very critical of the need for a very high level of confidence in the information and when you put it all together, we weren't comfortable that we -- we weren't convinced that this was ISAV.
Q Well, you say "we". Dr. Molly Kibenge was convinced.
DR. JONES: She may have been.
Q Yes. And so who do you mean by "we"?
DR. JONES: We means collectively the staff in the Fish Health, Fish Health Section at the Pacific Biological Station, which includes Garth Traxler and Dorothy Kiesler.
Q Did Stewart Johnson know about these findings?
DR. JONES: I'm not sure he did. He wasn't working with DFO until much more recently.
Q Well, did you discuss those with him once this became controversial in October?
DR. JONES: Yes, I did.
Q And was Sonja Saksida aware of this?
DR. JONES: I'm not sure. I didn't mention it to Sonja Saksida.
Q Back in 2004 did you not talk to her about this?
DR. JONES: I don't believe so. I don't recall speaking to her about this.
Q Well, why would -- why would DFO bury the results if they were simply something that was suspicious?

Isn't that how science works?
DR. JONES: Well, you know, this Commission might be surprised to learn that much of what we do provides negative results. We're sitting on files of negative results. My computer is full of negative results. They don't get talked about or published. We -- this is how it works.
Q This is significant, though, ISAV in wild salmon. Did you at least go and do more testing? Isn't that what scientists do when they have uncertain results is they test a bunch more salmon?
DR. JONES: Well, scientists do a lot of things, and one of the most important things we do is be very critical of what we're finding. We're -- we have to be necessarily critical and sceptical especially of unexpected findings, particularly when it relates to the occurrence of the first time of a highly virulent pathogenic organism in an area that's not been reported before. We have to be critical and sceptical.
Q But in the 2005 season, in the 2006 season, in the 2007 season, and on until DFO took over responsibility for aquaculture, DFO did not a single piece of research to sample wild salmon for ISAV. Is that your understanding?
DR. JONES: I didn't ask specifically what -- Kyle Garver was hired shortly after Molly Kibenge left and is now the research virologist. Garth Traxler and Kyle were both aware of the findings and whether they chose to pursue a research program in ISAV, I gather they did not, but I didn't ask why they didn't.
Q So Dr. Garver was aware of these findings back in 2004 and '05?
DR. JONES: Not that early. He was aware shortly after he started.
Q Okay. And so when he testified before this Commission he knew about these findings, too?
DR. JONES: He knew that there were findings that could not be repeated, that were not verifiable and that to our best opinion did not represent the occurrence of ISA virus.
Q And so when he was answering questions he didn't think that that was something relevant?
DR. JONES: I don't know what Kyle was thinking.
Q Could I have document 2118 on the screen. You were asked this morning by counsel about -- by

counsel for Canada about a document that had been -- come forward over the weekend. Did you discuss this document with counsel over the weekend?

DR. JONES: Yes, I did.

Q Was it you that brought it to his attention?

DR. JONES: This document was provided to me many, many weeks ago -- or it was provided into this process many, many weeks ago. It was provided probably mid-November, if not earlier.

Q But it was this weekend you chose to speak about it.

DR. JONES: Well, no, I've been speaking about this on several occasions, but it occurred to me that if it had not been entered into whatever the process is that brings it up on the screen, then perhaps it would be useful to do that.

Q Because you thought this statement about potential reagent contamination was something you wanted to rely upon.

DR. JONES: I think it's an important part of the puzzle. I think it's important to recognize the fact that we are inherently sceptical and critical and that we rely on the highest level of confidence in the data. And any indication that casts doubt on the reliability of the data, I think is important to be part of this discussion.

Q So the various -- the very researcher that was involved with this said there was a small possibility, and you chose to seize on that.

DR. JONES: Well, we have to look at all of the information. We seize on everything we can and judge it as to whether or not it's valuable or not.

Q Can I go to page 24, please -- 24, oh, sorry, the next page, 24 PDF. I think this is the conclusory part of the statement, Dr. Jones. Did you read that?

DR. JONES: Yes, I did. Yes, I did.

Q In the middle in bold it says:

> I suppose this result rules out the possibility of "reagent contamination"...

DR. JONES: Mm-hmm.

Q And isn't that because the strain that's found is different enough that it can't be from contamination if that strain doesn't exist before?

DR. JONES: Well, his data indicates that the sequences that he found were not consistent with his positive control, or with his controls, and therefore it rules out the possibility in this assay is a contamination.

Q Why would you tell the Commissioner about this -- mention on page 13 does not point out the key conclusion.

DR. JONES: This is an entirely different set of analyses. This is an examination of the segment 8 sequences. When people describe reagent contamination, it's a description of the possibility that's on a case-by-case basis, so what the early reference was made to is a reference to the possibility that in the 7th segment analyses the data -- there was a possibility that there was reagent contamination.

Q Well, I think I have to sit down, I'm out of time, but I want to just make sure I get at least one exhibit in, Aquaculture 14, please. Dr. Klotins, or Mr. Stephen, have you seen this study from the Senior Provincial Fish Health Biologist about the Province's assessment of eggs and the Health Regulations, have you seen that document?

MR. STEPHEN: I've seen the document when it was presented through the Commission, yes.

MR. McDADE: Can I have that as the next exhibit, please.

MS. CALLAN: The Province objects to this document being marked in as an exhibit. It's expert evidence without the proper foundation, and the -- the witness's qualifications and *c.v.* have not been attached.

MR. McDADE: We'll submit the witness's qualifications, Mr. Commissioner, and the Province has been putting in those kinds of documents all along.

THE COMMISSIONER: We'll mark it for identification.

MR. McDADE: And just to ask a qualifications question of Dr. Klotins, I think it's the email that's Exhibit 2110.

MR. MARTLAND: I wonder if we could just briefly obtain I suppose an alphabet exhibit letter.

MS. PANCHUK: Document for ID TTT.

TTT FOR IDENTIFICATION: Goldes, A Critique on Infectious Salmon Anemia Virus Detection Capabilities of the Canadian Fish Health Protection Regulations, 2011

MR. LUNN: Thank you. And the document you wanted, Mr. McDade?
MR. McDADE: 2110, I believe.
MR. LUNN: Thank you.
MR. McDADE:
Q Mr. Beres, who this document is -- this email is from, Dr. Klotins, he was at that time the Acting Regional Manager for CFIA?
DR. KLOTINS: I believe he was.
Q And he was the senior investigator on the West Coast in respect of your investigation?
DR. KLOTINS: He was the incident co-commander, yes.
Q So this is a person both -- he's obviously participating both in the public relations battle and in the investigation, and I just wanted to ask if you saw anything wrong with that?
DR. KLOTINS: I'm not going to comment on this email. It's not my email, and I can't speak to what Joseph was thinking at that time.
Q Aren't you his supervisor?
DR. KLOTINS: No. No, I am not his supervisor.
Q In regards to this issue, aren't you the senior person in charge of dealing with this?
DR. KLOTINS: No, I'm not.
MR. McDADE: Thank you.
MR. MARTLAND: Mr. Commissioner, I have next counsel for Conservation Coalition with 25 minutes. I see Mr. Taylor on his feet.
MR. TAYLOR: I'm just rising, without a microphone, to make a point because of the impression that may be left. There was mention of Dr. Garver. The participant Canada quite vigorously suggested that Dr. Garver be part of these round of hearings and Commission counsel declined to have him here. So his evidence is not going to be here, which I find regrettable, but I want to make that point so that it's clear that we offered him up.
MR. MARTLAND: I think we have Mr. Harrison running to the podium now.
MR. HARRISON: Good morning, Mr. Commissioner. Judah Harrison, for the record, representing the Conservation Coalition, which is a group of six

not-for-profits, and one individual, concerned with the resource that is wild salmon.

CROSS-EXAMINATION BY MR. HARRISON:

Q Dr. Jones, I'd like to pick up with where Mr. McDade was going. If you can put Exhibit 2118 on the screen, please -- 2118, thank you. And if you can turn to page 12 of this document, please. maybe scroll up to the email that attached these documents, please, it may be 11. Dr. Jones -- and this is the one, thank you. Dr. Jones, am I correct that you said that reagent contamination is no longer a potential problem with the Molly Kibenge samples? Was this possibility eliminated from your mind?

DR. JONES: You're asking me whether I concluded that reagent contamination was ruled out as a possibility?

Q Yea, I am.

DR. JONES: We didn't ever rule it out as a possibility of the work that she conducted at PBS, although it didn't always seem to be the case. With the work that Professor Kibenge in Charlottetown, Fred Kibenge in Charlottetown sent back to us, there was some indication that that may have been a possibility, and we had seen nothing to change that opinion based on the segment 7 work.

Q So am I correct that the date of this email is November 5th, 2003?

DR. JONES: That's what it says, yeah.

Q Can we scroll down, please, to page 20. It may be 19, forgive me. Up above, the email, please. Oh, no, sorry, it's a similar email. It's a similar email, and the date should be November 12th. But it's document, it's page 19 -- yes, thank you, 21. Would you agree with me, Dr. Jones, that this email was sent by Dr. Kibenge on November 10th, 2003, i.e., five days later, where the reagent contamination claim arose?

DR. JONES: This is November the 10th, yes.

Q So can we go down two more pages, please. He reported very similar information to you as what was attached to the November 5th email; is that correct? Continue to go down, I'm sorry -- that's the one.

DR. JONES: Yes, this is part of the submission of

information back to our lab.
Q So in your evidence, did Dr. Kibenge rule out the possibility of reagent contamination in the original samples that he sent you?
DR. JONES: This I understood to be a separate analysis. This was an analysis of the segment 8 sequences, and in reference to the segment 8 sequences he appears to rule out the possibility of contamination.
Q Okay. Well, I will leave it there, thank you. Dr. Jones, to the best of your knowledge, has there been any additional sampling by DFO or CFIA of Cultus Lake sockeye salmon, and has there specifically been any testing for ISA of Cultus Lake sockeye salmon since 2004?
DR. JONES: Hmm, not to my knowledge. But -- well, I can only -- I can only qualify that further by saying that I'm not advised always of exactly what samples are being processed by the virology program.
Q And am I correct that Molly Kibenge found 100 percent of the samples of Cultus Lake sockeye ISA positive, or that there was an initial detection, whatever the -- we don't want to get caught up in semantics, but was there an initial detection of positive finding of ISA in 100 percent of the Cultus Lake sockeye samples she tested?
DR. JONES: Her finding was that of the 64 tissue samples she tested from Cultus Lake sockeye, all 64 of those gave a positive result in her PCR reaction.
Q So I understand you were never able to repeat the results, using those same samples, but have you ever gone and obtained additional Cultus Lake sockeye samples and done any additional testing since that time?
DR. JONES: Well, part of that analysis was to try to understand the reliability of those 64 positive tests, and the evidence that was presented that she found, was that this was not ISA, based on the sequence information. The answer to your question is no, I have not come back to -- I haven't, and I'm not sure whether or not the virology program at PBS or whether other agencies have looked at Cultus Lake sockeye.
Q Have you ever suggested to anyone that they do additional sampling and testing of ISA, of Cultus

Lake sockeye salmon?
DR. JONES: No, I have not.
Q Okay. I'd like to move on to the draft surveillance plan. And this is Exhibit 2112 right now. Dr. Klotins, am I correct that you were among the primary authors of this draft surveillance plan?
DR. KLOTINS: No, I was not a primary author, but I did review -- I am reviewing several versions.
Q And are you familiar with the draft surveillance plan as is up on the screen right now?
DR. KLOTINS: If you could scroll down a little bit, I -- I might be able to...
Q November 2011, if you -- it's on the first page.
DR. KLOTINS: Yes, I've provided some commentary on this surveillance plan, but I haven't finished my commentary on this plan.
Q Dr. Stephen, are you familiar with this draft surveillance plan?
MR. STEPHEN: It's just Mr. Stephen, and, yes, I am.
Q Okay, thank you, sorry about that. Dr. Klotins, am I correct that this plan was conceived and developed following the most recent detections of ISA, and again I don't want to get caught up in semantics. But potential positive detections, was this surveillance plan drafted after that?
DR. KLOTINS: Yes, it was. It was part of the disease response.
Q Thank you. Do you agree with me that members of the public generally, and specifically I can point to Rick Routledge and Dr. Alexander Morton. Do you agree that these two persons were absolutely integral to bringing to light the fact of the potential of ISA in B.C.?
DR. KLOTINS: Well, I'm not going to comment on that. Part of the reason we're doing this plan is -- is basically to satisfy our countries that we trade with. They want to know the health status of finfish in B.C., salmonids.
Q So I understand that our trade partners want to know whether ISA's in B.C. Do you, in your view, does the public have a right to know whether ISA is present in B.C.?
DR. KLOTINS: Yes. Yes, I do, and they will know once it's been confirmed.
Q Thank you. So do you envision this plan and the test results to be public and transparent totally?

DR. KLOTINS: Yes, I do. I believe there is some indication of that if you look at the communications section. But certainly this is a draft plan, and we do report our surveillance results to the public.

Q So can we go to some specific aspects of this plan, and I would suggest that nowhere in this plan does it say that it will be given to the public. But I'd like to go to some specific parts and ask for comments on this.

First of all, page 6. If we can go to page 6, and I'm only going to use the actual numbers, not the PDF numbers. If you can -- the big paragraph, third, I guess, fourth paragraph down, the large paragraph in the middle of that, please. So the second-last sentence reads:

> There is no evidence to support that ISAV and IPNV occur in either wild or cultured salmon in B.C.

DR. KLOTINS: Yes.

Q Given the evidence we've heard to date, is that a true statement?

DR. KLOTINS: I believe it is. We've had preliminary test results. We've identified that there's issues with the test. It is not perfect. And there is no evidence to support that at this time.

Q So there is no evidence to support that ISA is occurring in either wild or cultured salmon in B.C.

DR. KLOTINS: Yes.

Q Thank you. If we go to page -- I think we're on page 6, so the very top paragraph on this page, it says:

> The...(CFIA) proposes to undertake the development and subsequently the implementation of the proposed plan in partnership with [DFO] and via a series of consultation with industry, provincial stakeholders and rights holders.

Mr. Stephen, and Dr. Klotins, will this include not-for-profit groups in B.C.? Are we part of provincial stakeholders?

DR. KLOTINS: Well, here it would be, I'm not sure

exactly what the wording is. If they need to be part of the consultation, I don't see why not. And we can adjust the wording to reflect that.

Q So you weren't trying to exclude them, but it --

DR. KLOTINS: No.

Q Okay, thank you for that. I'd like to ask, you know, picking up on this, going back to the statement that there was no evidence of ISA in B.C., or IPNV in B.C. in either wild or cultured fish. My question to you is, well, first of all, am I correct that this draft surveillance plan will look at three diseases, ISA, IHN and IPN, or ISAV, IHNV and IPNV?

DR. KLOTINS: Yes, initially that's what we're proposing. Of course, that's open to commentary, as well.

Q My question to you is how did you come to these three diseases, and particularly I'd like to ask you with respect to IPNV, considering it's never been found in B.C. in any wild or cultured fish. Why is it part of the Draft Surveillance Plan?

DR. KLOTINS: As I mentioned before, countries are asking us to demonstrate freedom, and from historical evidence, or at least from anecdotal evidence, and some -- and the extensive testing that's been done to date, or at least the testing that's been done to date, there doesn't appear to be IPNV. However, if we're going to -- you know, because the Province isn't closed to trade, and because we haven't tested everything, we will be putting in the Surveillance Plan to continue making the claim of disease freedom for IPN. It may be that we find it eventually, and then we won't be able to make that claim.

Q Dr. Jones, Dr. Wright, are there any additional diseases that you can think of that should be part of this surveillance plan? Do you feel that it's sufficient to only look at these three? Are these the three most important?

DR. WRIGHT: I would say that I'm not the expert that you should be asking. I just make sure that whatever is on that list that's put there by our partners, that I can test for accurately.

Q Dr. Jones, do you have any comments on whether this or -- whether these or other diseases should be part of the surveillance plan?

DR. JONES: Well, I agree that these three viruses are

important, and that based on the need to demonstrate presence or absence of infection with them, that they should form the basis of a surveillance program. But that as new information becomes available, that perhaps this list will be lengthened.

Q What about -- do you believe that novel diseases are a potential threat to both cultured and wild salmon in B.C.?

DR. KLOTINS: With respect to that, we keep an eye on what's happening globally in terms of infectious diseases in salmon. In addition, OIE member countries bring up issues, either in the regional meetings or in the annual general meeting at the OIE. There's also conversations we have with our trading partners about what diseases people are finding and may be important. And if they -- if we need to test for those diseases, they will be added to the scope.

Q So theoretically, if there was a novel strain of ISA in B.C., would you have to develop a surveillance strategy to actually look for that novel disease -- that novel strain, excuse me?

DR. KLOTINS: I'm probably going to defer to Peter on this. But right now, my understanding is that the PCR for segment 8 should be able to detect every known strain of ISAV. Of course, if a new one is detected, it will be checked to see if it can pick it up. I think it would be very unusual that there would be a new strain of ISAV with a complete different segment 8. The reason they chose that is because it's the most conserved element of the ISAV virus and should pick up the strains. But of course we're always checking and making sure that will happen.

Q So, Dr. Klotins, in your understanding, is there a significant chance or significant potential that we have a mutated novel strain of ISA in B.C.? Is there a significant likelihood, a potential likelihood?

DR. KLOTINS: I would say the likelihood right now is low.

Q There's a low likelihood, but there is some likelihood.

DR. KLOTINS: Yes.

Q In your view, is it possible that the only reason DFO and CFIA have not been able to confirm this,

or the primary reason is as a result of the assay or primer used at DFO Moncton? Dr. --

DR. KLOTINS: It would be -- oh, sorry.

Q It was just Dr. Wright put up his hand. I'll let you answer and then give it to him, please.

DR. KLOTINS: I think I've already answered that, that the likelihood would be very low.

Q So in your view there is no chance that that is the reason that we're not detecting -- that DFO is not detecting it, and Moncton, or it's the very low likelihood.

DR. KLOTINS: Very low likelihood.

Q Very low likelihood. Dr. Wright?

DR. WRIGHT: We've done comparisons -- well, as Dr. Klotins said, segment 8 is the one that's being -- the PCR is identifying this region for two reasons. One is it's very highly conserved amongst the known ISA viruses that are out there. It doesn't discriminate between either European or North American strains. It picks them all up, and that's why you see in some of these designations they call it "uni" because that's universal. So it is, it is highly conserved and it is also one that during infection there tends to be more copies of this because the viral production of protein, this particular protein is much higher. So you've got two things working for you with segment 8.

And we have shown that using the same primers and probes, or the different primers and probes, the Snow versus the ones that are being used in B.C. and the ones that are being used by ourselves, should be able to pick up all known strains of the virus.

When you talk about novel strains, there may be a novel strain. There may be a very old strain. We don't know. It's not one that was -- send up red flags there's apparent disease outbreaks with it. And as I have said before, you can have viruses circulating out there at very low levels that may never ever cause a disease.

So the determination will have to be made, even if there is a virus out there, whether it's something that needs to be regulated or not, or just put on a watch list. Because it's hard to regulate something that does not cause any disease.

Q Dr. Klotins, would the use of multiple primers or assays enhance confidence in the testing results?
DR. KLOTINS: That's a really good question. I haven't seen a paper that addresses that at all. Like again, like I said, the -- and the segment 8 is the highly conserved segment in ISAV. Our current understanding, the variance that we do see in the current understanding is more segment 6 and more segment 5. And whether there is other variance that can cause such a change in segment 8, really we need to get a good geneticist who is involved or who knows about mutations and see what even the possibility is of doing that.
Q Can I have Conservation Coalition document Tab 21 on the screen, please. Dr. Klotins, are you familiar with the OIE Aquatic Animal Health Code?
DR. KLOTINS: Yes. I've seen it, I haven't memorized it.
Q Well --
DR. KLOTINS: Sorry.
Q -- I don't believe anybody in the world has and if they have, they're scary. But if we could turn to page 3 of this, please. And I'd like to take you to the second-last paragraph on this page, and I'll just read this for the record:

> Methodologies for the analysis of *surveillance* data should be flexible to deal with the complexity of real life situations. No single method is applicable in all cases. Different methodologies may be needed to accommodate the relevant pathogens, varying production and *surveillance* systems, and types, quality, and amounts of data...

Dr. Klotins, in your view, is it fair to say that multiple methodologies will enhance confidence of surveillance testing regimes?
DR. KLOTINS: Yeah, this particular chapter doesn't just deal with test methods. It talks about methodologies you can use to analyze the data to provide interpretation of test results, as well. Like I said, the test is not perfect and you need to be able to interpret those test results.
As, and I agree, as scientific information becomes available, we need to incorporate that into our surveillance plans. So, for example,

what we currently know about ISAV, we will not just be testing kidney. We will also be testing gills, because of the possible -- the gills may be a better location for identifying the non-pathogenic variant, or strain, I should say, if that truly exists. And so we are making modification based on current knowledge. Now, whether we have to do multiple PCR assays, that actually would be better addressed as an epidemiological investigation research project.

Q I've been told I only have three minutes left, so I'm going to go really quickly here. But Dr. Klotins, did you -- are you familiar with the Wild Salmon Policy?

DR. KLOTINS: That is put out by...?

Q The Department of Fisheries and Oceans.

DR. KLOTINS: No, I'm not.

Q Mr. Stephen, are you familiar with the Wild Salmon Policy?

MR. STEPHEN: I just heard mention of it, but I'm not aware of it in any details at all.

Q So is it fair to say that conservation units of Fraser sockeye salmon and the status of conservation sockeye units was not at all considered in the development of the draft surveillance plan?

MR. STEPHEN: I'd like to answer that.

Q Please.

MR. STEPHEN: As I mentioned, I believe, on Friday when I asked about the version of the surveillance document, Dr. Stewart Johnson is providing coordinating input into the document. I have no idea if this particular version is incorporating that information or other information yet, because I haven't had a chance to do that. But we are endeavouring to gather information from all parts of DFO to provide input into this document, and, as you indicated, it is a draft.

Q Well, may I suggest that you look at the Wild Salmon Policy and the work of conservation units of Fraser sockeye salmon, as there's been much work around this.

DR. KLOTINS: And I will pass that on to Dr. Bruneau, who is writing on the -- writing up the surveillance plan.

Q Thank you. Given my lack of time, I'm only going to go to one more area. Dr. Klotins, can you give

me an approximation of the number of Fraser River sockeye salmon that will be sampled in one year, given your draft plan? How many are we talking about here?
DR. KLOTINS: I would have to look at the table that's been provided so far.
Q Okay. So can we go to page 20, which is the table that is provided so far, page 20 of the actual document. Oh, I'm sorry, I would like to go back to the draft surveillance plan which is Exhibit 2112. The very last, on the bottom of page 20, this is a chart that sets out which sockeye salmon will be sampled in the first two years. Am I correct about that? This surveillance plan is the entirety of DFO and CFIA's response for two years?
DR. KLOTINS: Like I said, this is a draft plan.
Q Yes.
DR. KLOTINS: This is an initial -- I guess, an initial estimate of what we need to do for sampling. It is still open to commentary. So the -- my understanding is the -- this is proposed for each of two years, and but the plan will be reviewed after the first year. Well, I mean, we haven't come up with a final plan yet, number one. So we need input there. But it will be reviewed after the first year to see if that needs to change in terms of our sampling frame.
Q Thank you. Is anyone here very familiar with where Fulton River spawning channel is, where Pinkut Creek spawning channel is, where Nadina spawning channel are? These are three of the four areas that DFO or CFIA will sample Fraser sockeye. Anybody on the panel? Dr. Jones? Maybe I'll ask my direct question. Is it fair that these are in the Skeena watershed and not on the Fraser River, all three?
DR. KLOTINS: I believe that the Weaver Creek is on the Fraser River, is it not?
Q yes, the Weaver Creek is on the Fraser River, and I haven't gone there yet. So --
DR. KLOTINS: Okay.
Q -- am I correct, Dr. Klotins, that of the four areas that you will be sampling sockeye salmon, only one is Fraser River sockeye salmon?
DR. KLOTINS: That is what's currently being proposed. That may not be correct.
Q So am I correct that this, for the entire year,

the entirety of your surveillance plan sees collection and sampling of 88 Fraser River sockeye salmon on one single day in one single area, and that's 88 fish?

DR. KLOTINS: It doesn't speak to those will be collected all on one single day. And so that may not be correct, because the timeframe is indicated February to May. There are assumptions on the sampling, framed in terms of what the population is of sockeye salmon. And currently I believe the -- I don't know how many sockeye salmon populations are being considered, but I think they're basically considered one because of the mixing out in the Pacific Ocean.

Q I'll have to leave it there because I'm out of time, but I need to ask one more question. Dr. Jones, given you're expert in virology, is the surveillance plan adequate to obtain a confident answer of whether or not there is ISAV in Fraser River sockeye salmon?

DR. JONES: Well, I'm an expert in parasitology, I'm not an expert in virology. I'm seeing this for the first time. I think I would like to look at it more thoroughly, but it's always very difficult to know exactly what an optimal number is in a surveillance program, given that uncertainty is --

Q Is 88 sufficient?

DR. JONES: Well, probably not --

Q Thank you.

DR. JONES: -- for one site.

MR. HARRISON: Thank you.

MS. PANCHUK: Would you like to have this document marked?

MR. HARRISON: Thank you very much.

MS. PANCHUK: This one will be 2134.

EXHIBIT 2134: Aquatic Code, Ch. 1.4 Animal Health Surveillance

MR. MARTLAND: Mr. Commissioner, I didn't rise before, but our understanding is that the Nadina indeed would be part of the Fraser watershed. I thought Dr. Jones was trying to pick up on that and his mike wasn't firing. I don't know if he was looking to pick up on that point, or just out of fairness to the witness if he was, this is a chance to do that. Otherwise we move into counsel

for Areas D and B with 25 minutes. But if I might just see if Dr. Jones did wish to make a point there.

DR. JONES: No, I have no further comments.

MR. MARTLAND: All right. Mr. Rosenbloom, 25 minutes, thank you.

MR. ROSENBLOOM: Thank you very much. Mike on, thank you. My name is Don Rosenbloom, and I appear on behalf of Area B and Area D, and for those of you from Ottawa, Area B is the seiner fleet of the South Coast; Area D is the gillnet fleet, one of the gillnet fleets of the South Coast area. The time right now is 12:02 and I assume I will go to 12:30, having been provided with 25 minutes.

CROSS-EXAMINATION BY MR. ROSENBLOOM:

Q I want to first deal with you, Mr. Stephen, and with respect to communications that you had with Dr. Miller subsequent to her research work of recent day becoming known to you. And we were provided with a will-say of your evidence, and it says in this will-say in part, in respect to your evidence, and I quote [as read]:

> He may answer questions about what he told Dr. Miller about her testing fish samples for ISAV and what the consequences of her making a positive report of ISAV findings would be.

What, sir, did you tell Dr. Miller in terms of the consequences of her coming up with a positive result?

MR. STEPHEN: I spoke to Dr. Miller and told her that coming with results from a research angle without proper confirmation of those results from a diagnostic perspective could have dire consequences. It's the same as what we've been talking about all morning with respect to preliminary results coming out publicly until you get confirmation. And then I went on to say to her that what we need to do, and I did speak at length to her supervisor afterwards, is take her findings and put a project plan together to look at an appropriate way to deal with answering the questions that she has arrived at, or with -- based on her preliminary findings to move ahead in

a structured way.
Q Yes. But we all recognize that preliminarily a finding comes out of an ISA.
MR. STEPHEN: Mm-hmm.
Q Which then leads to subsequent work that has to be done. Were you faulting Dr. Miller for the fact that she had determined that there were positive findings?
MR. STEPHEN: Not in the least. I was surprised that Dr. Miller had not come forward with her original findings -- or her findings earlier, because she was obviously aware of an ongoing investigation, and that was important to notify CFIA. I was surprised again that Dr. Miller, as I testified twice already, I believe, that Dr. Miller had not come forward to CFIA and properly notified them in an appropriate and timely manner.
Q Well, Mr. Stephen, I think it's only fair to you that you're confronted with the testimony that Dr. Miller gave on Thursday of last week, December the 15th, and I refer to the transcript, Mr. Lunn, of that date, page 127. And I ask for you to look at line 16 of that page, where I am questioning Dr. Miller about this very communication between you and herself. And at line 16 I asked:

> Did he say anything --

- speaking of you, Mr. Stephen -

> -- in terms of how positive findings might be consequential in terms of our relations with the Americans?

Answer:

> I think he just intimated that I, as a scientist, would not understand the complexities of these issues and that, as a scientist, I should not be undertaking research on something if I didn't understand the ramifications of what the results could do.

Let's stop there for a moment.
MR. STEPHEN: Mm-hmm.
Q Do you agree with her characterization that you

were telling her that she shouldn't be pursuing research if she didn't understand the ramifications of her results?

MR. STEPHEN: No, I don't agree. I agree that I was saying to her that in the context of a reportable disease, that research can tie into regulatory research as we are doing already within the scope of the NAAHP program.

Q You agree, do you not, sir, as a scientist, one should not be in the slightest concerned with political ramifications of their work, that their responsibility as scientists is to conduct in an objective way whether or not there are positive findings to be had?

MR. STEPHEN: I agree, and so does the Department. We welcome, and I have already attested to funding that I've provided Dr. Miller, even recently, for research, pure research. What I did say and what I have gone on to discuss with her supervisor, as I mentioned before, is it a point now to bring in this newfound research and tie it into a regulatory program, that we need to have more answers to.

Q Let's go on with her testimony. I'm at line 25 now.

MR. STEPHEN: Mm-hmm.

Q I asked:

> And you took that as being intimidation, did you not?

Dr. Miller's response:

> Some level of intimidation.

Do you accept how she could have interpreted your remarks as being intimidation?

MR. STEPHEN: I do not.

Q You do not. Thank you. I go on to my next area of examination. The Minister's press releases, there are I believe two press releases that are - excuse me just one moment - that are really before us of some importance. And one press release, and I, because of time, I'm trying to make this quick and some of my friends have already pursued these threads, speaks of reckless conduct. In another press release, the one of December 2nd, it speaks

of unfounded science, and so on. My question to you is first you, Mr. Stephen, these press releases being authored by your Minister. Did you -- do you at this day, knowing what you know, find that ministerial comments, both in the November press release and the December press release to be acceptable and accurate?

MR. STEPHEN: First I'll repeat that some of those comments were not made by my Minister, they were made by the Minister of the Province of British Columbia. Secondly, I feel in general that the Minister's comments do reflect the investigation and the findings up to that date.

Q And so you stand here and you're comfortable in adopting the term "reckless and unfounded"?

MR. STEPHEN: I did not say that.

Q Well, are you comfortable in adopting the remarks made by your Minister?

MR. STEPHEN: I don't think my Minister made those comments.

MR. TAYLOR: Well, I'm going to object. And if my friend wants to ask these questions, the witness has already said that was the provincial Minister. he's going to need to bring up the document, and put it to them.

MR. ROSENBLOOM:

Q I'm happy to do so. First of all, it's because of time that I -- you are familiar with the comments that were made in these communiqués, were you not?

MR. STEPHEN: I've seen a lot of documents, sir, in the last few days, and I don't want to comment on something I don't -- I can't recall everything. I'm getting old. My memory doesn't serve.

MR. MARTLAND: I think that the first one may be Exhibit 2089, the other one, December 2nd, should be Exhibit 2004. So 2089 I think is what Mr. Rosenbloom may be referring to.

MR. ROSENBLOOM: Mr. Lunn, if you could put that up.

Q Now, this is the one of November the 9th. You will see approximately paragraph 5 down, it speaks of recklessness. Do you see that, Mr. Stephen?

MR. STEPHEN: Yes, and I also see it's not from my Minister.

Q No. But it's from the federal government jointly with the provincial government, is it not?

MR. STEPHEN: That is by the federal government, yes, but it's not from my Minister.

Q Yes, but you're integral to this whole sequence of events that lead us to this hearing today, are you not?
MR. STEPHEN: I've been involved directly, yes, since the 17th of October.
Q Yes, you hold a senior position.
MR. STEPHEN: Well, Director's not that senior, but, yes, I hold the position.
Q Yes. And I'm asking you in that position whether you're comfortable in informing the Canadian public that there was recklessness by those that participated in announcing positive results.
MR. STEPHEN: Sir, I reply back to you that I give advice, informed science advice to senior management and to the Minister, and ultimately it's the Minister's prerogative to make informed decisions on that advice. I cannot stop anybody putting down something in those documents. My Minister did not make that statement. The B.C. Minister did.
Q I understand. Now, let's lead to the second of the communiqués, Exhibit 2004. And the clause that has been highlighted to witnesses today and yesterday -- or Friday is the third paragraph down:

> After Canada’s reputation has needlessly been put at risk...

And this is your Minister speaking, is it not?
MR. STEPHEN: Yes.
Q Yes. It goes on:

> ...over the past several weeks because of speculation and unfounded science, additional in-depth, conclusive tests, using proper and internationally recognized procedures, are now complete and we can confirm that there has **never been a confirmed case of ISA in BC salmon, wild or farmed.**

Did you participate in the drafting of that communiqué?
MR. STEPHEN: I participated in putting some input into that, yes.
Q Yes. And so you were seeing drafts of this document where they spoke of unfounded science?

MR. STEPHEN: Yes.
Q And you were comfortable with it then?
MR. STEPHEN: I provided comments to my Minister, and communications, and they accepted what they wanted from my comments.
Q Yes. And did -- were your comments that to make such a statement might be reckless?
MR. STEPHEN: I didn't say the word "reckless". I said, I would have used "because of speculation", there has been a lot of speculation in the media. I wouldn't have said "unfounded science".
Q And you wouldn't have said "unfounded" because it was inappropriate, wasn't it.
MR. STEPHEN: I would have said "unconfirmed science".
Q Sorry, I didn't catch it.
MR. STEPHEN: Unconfirmed.
Q Unconfirmed.
MR. STEPHEN: In other words, our laboratories were asked to confirm the presumptive positive findings, and that's what we attempted to do.
Q And am I right, sir, in suggesting that as of December the 2nd, when your Minister issues this communiqué, that he and your Department are well aware of Dr. Kristi Miller's results coming out of Nanaimo.
MR. STEPHEN: We were aware of those, but again, as I repeated earlier, those are only preliminary results.
Q Yes. We recognize that. But you did not feel that it was appropriate that the Canadian public at least be informed of what you knew that a scientist within your Department had come out with positive results from testing.
MR. STEPHEN: Preliminary results are never released. We have to confirm them. We've gone and done tests for the first set of results Dr. Miller produced. We are now going to be producing -- trying to confirm the preliminary findings of the second set. We may in fact at some time come across ISA in B.C., and we will report according to these to CFIA. But until such time preliminary results will not be reported as positives and will not be made public.
Q Now, I come to the business of Dr. Molly Kibenge's work back in 2004, well, actually, 2002, 2003, 2004, and my friend, Mr. Harrison, was speaking about the Cultus Lake results. I put these

questions to Dr. Jones, in particular, and to you, Dr. Klotins. You've been questioned even today about the decision not to pursue testing of wild salmon subsequent to 2004; is that not correct? You obviously were asked those questions and you said you did not, correct?

DR. JONES: That is correct.

Q For the life of me, I don't understand why knowing what you knew in 2004, albeit that you questioned the veracity or the validity of Dr. Kibenge, Molly Kibenge's work, that you didn't consider it critical to instigate or initiate a surveillance program in that period of time. Can you answer why?

DR. JONES: Well, viral surveillance of Fraser River sockeye has been underway since before 2004 and up until this year. There's an annual surveillance of Fraser River sockeye for viruses. They culture virus or they culture tissues from these fish, looking for viruses. What they find is IHN virus, when they do find a virus. So there is a surveillance program that is underway for viruses.

Q But as of 2004, ISAV got on your radar screen, if only it was controversial. But the fact is it was on your radar screen as of that date, correct?

DR. JONES: There were some lab results that indicated the possibility of ISA.

Q Well, I say that goes on your radar screen, doesn't it?

DR. JONES: We were obviously aware of that, so we conducted, and we were aware of the significance of that, as well. This is not something we treated trivially. We conducted a lot of confirmatory tests, and there's -- as a result of those tests, we found that we could not confirm the findings. And so as is the result of many things that we look at, we determined that that was a negative result and we carried on. Now, I can't talk about the decision-making processes that my colleagues in the virology program went through, but I'm not aware of any specific target ISA screening that was -- that's been continued.

Q But you explain why nobody within your Department chose to initiate a surveillance program, albeit that they perceived Dr. Kibenge's results as inconclusive. Why didn't somebody feel that it was in the public interest that at that point in

time there be an aggressive program of surveillance to determine whether or not maybe Molly Kibenge was right.

DR. JONES: Well, I can only speculate as to why that decision was made, or if a decision was made at all. I'm not aware that the fish had not been screened, but I'm certain that there's not been a significant effort till recently. I can only speculate that they decided this was not significant because of our determination that this was not a positive finding.

Q But, you know, Doctor, and I appreciate you haven't been here day in and day out, but we've been at this for almost a year, and if there's any topic that has been of paramount importance to this Commission, it appears to be the Cultus Lake stock. And you were asked a question a few moments ago, you as a panel, about the Wild Salmon Policy. You are aware, are you not, that the issues surrounding Cultus Lake are affecting the commercial fleet in the opportunities to fish in the West Coast, and you're aware that between 2007 and 2009 in fact there really wasn't a commercial fishery because in part the government and DFO is motivated to attempt to protect the Cultus Lake stock. You're aware of that, are you not, in a general sort of way?

DR. JONES: Yes, I am.

Q Okay. And knowing what you knew back in 2004 that Dr. Molly Kibenge was coming out with the results of 100 percent, as spoken about by my friend, Mr. Harrison, a moment ago, wouldn't that have triggered off in the minds of yourself and those in authority at DFO that maybe you should be doing a second test, a third test, and really putting to rest that you could be confident that in fact the government was carrying on surveillance about ISAV at Cultus Lake, and that there was not an issue of a pathogen?

DR. JONES: You know, shortly after Molly Kibenge conducted those tests, she sent me an email and essentially said in that email that these -- this result does not represent ISA virus. And a reflection of that was stated in the manuscript. This was just another part of a long series of information that led us to believe that these were not true ISAV results.

Q But to determine whether there is a virus, don't we go through this sequence, if I can call it that, of determining by lab of a positive result, then sequencing, culturing, and then determining whether there's a pathogenic event going on that may be killing fish. Do you agree with this?
DR. JONES: Absolutely, and we have obtained samples from Fraser River sockeye, both in the virology and the parasitology program over many, many years. We have never seen any evidence of clinical disease that would be typically associated with ISAV. We've never seen pathology, or we've never isolated the virus. There's no information that would lead us to believe that that finding was a real finding.
Q But being in your position, it seems to me if I were in your boots and I was facing down the fact that a scientist within my Department came up with positive findings in respect to ISA, that were confirmed by the OIE lab in Prince Edward Island, I would have thought, if I were in your boots, I'd be saying to myself, well, okay, it's not confirmatory. We're not totally comfortable with this, but we'd better cover ourselves by ensuring that we do further testing of the Cultus Lake stock and we are able to say to our superiors, and indeed in turn to the Canadian public, that, look, we are confident that Dr. Molly Kibenge's results were all false positives and that we do not have an issue here. Why is it that that wasn't your thinking?
DR. JONES: Well, we deal with disease and pathogens of fish all the time, and we have approaches and practices that we adopt to determine the validity of approaches. By the way, the lab in Charlottetown was not designated as an OIE reference lab until, I think, a year after we conducted our -- he conducted analysis of our data.
Q Fair enough. But whatever its designation was, you do recognize that Dr. Molly Kibenge's results went to PEI and three positives found that were her three positives, and as I read the material, three positives she found that actually Dr. Molly Kibenge did not find. Right?
DR. JONES: That's correct.
Q Right. That was of some significance, wasn't it?

DR. JONES: Well, it was also of significance, in my mind, that three of seven that she'd identified as positive could not be confirmed by Fred Kibenge's lab. You know, so we were dealing with the possibility of something quite significant happening. We needed to be sure that the evidence that we pulled together to support the claim of ISAV was impeccable.

Q I've just got a few minutes left. Let me move to the business of the results most recently of 2011. And we've talked last day about -- and today, in fact, about Exhibit 2110, which is the email that speaks -- and maybe Mr. Lunn will put it up on the screen. And it speaks of this PR battle. Before speaking directly to this email, one thing I'm having a lot of trouble with, is in terms of 2011, we have the results that came from Dr. Kibenge's lab, we have the results of Norway, which were limited, but of some positive finding, and then on the government side - if we can talk about two sides; it seems like the government likes to approach it at two sides - all we have are unsubstantiated results of no meaning whatsoever. Because as I read the material, and as I hear Dr. Gagné last day, she speaks of her results being inconclusive because of the degradation of the samples that she received. Is it -- am I fairly characterizing the two sides of what could be argued on the positive side, and what could be argued on the government side. Does the government have any better case than to announce that they have sent these samples to their lab in Moncton, that they were sadly degraded, and they were unable to really test them. They called them negative, but they were inconclusive. Is that a fair characterization? In fact, maybe to you, Dr. Klotins.

DR. KLOTINS: It seems that there's a number of questions, and I'm sorry if I can't sort them out but I'll try to answer the best I can. Basically, there's the testing portion, so there's test results. And then we take those test results and we interpret them, given what we know of the possibility of ISA being out there, the possibility that, you know, this is a susceptible species, other information about ISA. So basically we have an idea already of whether these

results can be interpreted with any sort of meaning. As I mentioned to you before, that not all the results were inconclusive, I need to repeat again that the 48 kidney samples were negative for sure. And in terms of inconclusive on those 48 fish, inconclusive doesn't mean the samples were not negative, as they're not just sure if they could have been positive.

So in terms of, you know, our belief of ISA occurring in B.C., we would need more evidence for positive, to say they were positive.

Q Yes.

DR. KLOTINS: More information.

Q Yes.

DR. KLOTINS: And this is why we're starting our surveillance program.

Q But doesn't "inconclusive" mean, frankly, of no meaning whatsoever in terms of -- of your analysis? I mean, doesn't inconclusive mean, listen, we aren't able to really test these samples, and we're unable to therefore say one way or the other from our testing, whether it's positive or negative.

DR. KLOTINS: Yes. I have been asking questions about the RNA integrity testing and whether that really does affect the test results for PCR, and that's one area we do have to investigate further. My understanding is that if -- if titres are really high in the fish, you should be able to detect the virus.

Q The email that is now on the screen, Exhibit 2110, from my reading of it, it characterizes a state of mind within government that you're fighting a propaganda war, as you see it. Now, I know, Dr. Klotins, this is not your email. But I'm going to invite you to agree with me that the state of mind within your Department, within your branch of government, CFIA, is in fact that you are fighting a propaganda war, that what is the ultimate purpose of your work is to simply win this war of those in the public interest that are trying to bring out information. Do you deny that?

DR. KLOTINS: I personally don't agree with that statement. Again, I cannot speak to Joseph Beres's comments. From my viewpoint, I'm there to find out if to assess the information and critically appraise it and make a determination at

this time, we find it negative. However, there are still some questions to be answered, and we will be putting in a surveillance program. So I do not agree with your statement.

Q And you say you're putting in a surveillance program. That is an afterthought that has only been developed by your Department and DFO subsequent to the revelations in October of this; is that not correct?

DR. KLOTINS: That is not entirely correct. There has always been plans to put in surveillance programs for all -- I did mention this before. To put in surveillance programs for all the commodities. We knew we were -- we would have to do this for the salmon commodity on the West Coast, as well. It hadn't been done up until this point because we needed to secure the resourcing to move ahead with the surveillance program, and in addition we had to work with industry to find out basically what was being done on the cultured side, identify the gaps, and then identify what we needed to do on the wild side. It was already in progress. It's just this event happened to push things forward because our countries are starting to ask for our claims of disease freedom, and our supporting information for those claims.

Q Thank you. My time is up, but is money an issue here?

DR. KLOTINS: Resources are always an issue.

Q Are you anticipating problems in implementing a surveillance plan because of financial restraint?

DR. KLOTINS: We're not anticipating that at this point. But I can't guarantee that something, that resources may diminish. I should point out, though, that the surveillance program won't be a one-off program, and that you can build evidence over time. So even though we may not test everything we want to test for this year, we can use that information and use it build on in the following years, and eventually get to a claim of freedom.

Q Will wild sockeye be high on the list?

DR. KLOTINS: I believe all Pacific salmon are -- and the Atlantic salmon are on the list.

Q Thank you, and Mr. Stephen did want to say something.

MR. STEPHEN: Well, I just wanted to add that again

we're talking about a draft surveillance plan, and until the finalized version or the most up-to-date version, we can't really look at the overall scope of resource impacts on that. We will be looking at that, obviously in any program we do, we look at that and we'll try and look at how we can best optimize the resources we already have. There's already talk, I saw it in the plan, about obtaining samples from processing plants, which would save some, you know, going out and chasing fish, or getting them from the fishery as they're landed. So there's ways to reduce resource costs in any certain program that you're doing.

MR. ROSENBLOOM: Thank you. Those are my questions, Mr. Commissioner.

MR. MARTLAND: Mr. Commissioner, that concludes the evidence for the morning, but not the panel. We'll be convening this afternoon from 3:15 until 4:30, so we'll now move to the lunch break. Thank you.

MS. PANCHUK: The hearing will now adjourn until 3:15. Please remain standing in place while the Commissioner exits the room. Thank you.

(PROCEEDINGS ADJOURNED FOR NOON RECESS)
(PROCEEDINGS RECONVENED)

MS. PANCHUK: The hearing is now resumed.

MR. MARTLAND: Mr. Commissioner, we have counsel for the First Nations Coalition next with 25 minutes.

MS. PENCE: Thank you. Leah Pence for the First Nations Coalition.

CROSS-EXAMINATION BY MS. PENCE:

Q For the benefit of the witnesses, the First Nations Coalition is a large coalition of First Nations tribes and First Nations fisheries organizations. We represent the Council of Haida Nation, a number of Douglas Treaty nations, the First Nations Fisheries Council and a number of other First Nations fisheries organizations throughout the province.

Mr. Lunn, if we could start with document for ID SSS, just a very brief housekeeping matter.

Dr. Klotins, do you recognize these two documents, the first being an email between you

and Timothy Davis attaching document entitled "PCR Issues"?

DR. KLOTINS: Yes, I do.

MS. PENCE: Can we please have this marked as an exhibit proper now?

MS. PANCHUK: 2135.

EXHIBIT 2135: Email from Timothy Davis and attached PCR Issues

MS. PENCE:

Q Thank you. I don't actually have any questions. I just want to make sure that's on the record as an exhibit. Thank you.

My next set of questions will be directed to you, Dr. Wright. And I wonder if, Mr. Lunn, you could please pull up commission's document number 74. Dr. Wright, do you recognize this as being an email between you and Stewart Johnson, as well as others, about the term "inconclusive"?

DR. WRIGHT: Yes, I do.

MS. PENCE: Can I please have this marked as the next exhibit?

MS. PANCHUK: 2136.

EXHIBIT 2136: Email from Peter Wright to Stewart Johnson dated November 18, 2011

MS. PENCE: Thank you. And I'd just like to read into the record what it says here. It says:

> CFIA also received 299 sockeye salmon fish samples that were thought to be collected at the same time as the original 48 that prompted this investigation. From these, all 299 samples have been tested and all results are negative; however these results must be considered as inconclusive at this time because of the poor quality of the samples received which prevent the detection of the virus with any reasonable confidence.

You go on to say:

> The use of the term "inconclusive" must be taken within the context of the integrity of the sample. Basically, it's a quality issue

because these samples were so badly degraded. Under normal circumstances, these samples would have been considered unfit for testing.

Nevertheless, our RT-qPCR test results were all negative from an analytical point of view (i.e. we have not found any detectable viral RNA in the samples). From a diagnostic point of view (i.e. with respect to the presence or absence of the pathogen in the field), we are saying that any interpretation must be qualified or guarded because of the degradation of the test material.

Dr. Wright, do you still agree with what you wrote in that email?

DR. WRIGHT: Yes, I do.

Q Thank you. And if I could please pull up Exhibit 2004. That's the statement from the minister that's dated December 2nd. I believe we've seen this a number of times today. But I would like to direct my questions now to you, Dr. Wright. And Mr. Lunn, if you could just zero in on the third paragraph. And it says:

"After Canada's reputation has needlessly been put at risk over the past several weeks because of speculation and unfounded science, additional in-depth --

And this is the key word.

-- conclusive tests, using proper and internationally recognized procedures, are now complete and we can confirm that there has never been a confirmed case of ISA in BC salmon, wild or farmed."

Dr. Wright, can you comment on that word "conclusive tests"? Is that accurate in your view?

DR. WRIGHT: Well, there have not been any conclusive tests, mainly because that in order to identify a pathogen as being there, you either, (1) have to be able to obtain it by, you know, through isolation and cell culture, or you have to be able to amplify enough genetic material that you can

actually do some definitive sequencing on it.
Q And your earlier email had referred to the correct term in a diagnostic perspective as being to say that the -- that the tests were inconclusive; is that correct?
DR. WRIGHT: I'm saying the interpretation of the screening tests that we've done should be considered inconclusive because of the degradation of those samples.
Q So the phrase there "conclusive tests", is that an accurate statement?
DR. WRIGHT: Well, not in the terms of -- it depends on how you interpret that as either being confirmatory testing, which none has been done by our lab or anybody else's lab.
Q Okay.
DR. WRIGHT: Right? But in terms analytically, we've found nothing. We said the interpretation must be guarded, but there have been no conclusive confirmatory tests done by anybody at this point in time.
Q I'll move on. If I could please pull up First Nations Coalition document number 11. And my questions are now for you, Mr. Stephen, do you recognize this as being an email chain involving you and Dr. Kiley? If you can just scroll down a little bit, probably about halfway down, and at the very bottom you can see Stephen Stephen dated November 7th. Do you recognize this email chain?
MR. STEPHEN: Yes, it looks like something that was sent to me by Dr. Kiley.
MS. PENCE: Can I please have this marked as the next exhibit?
MS. PANCHUK: 2137.

EXHIBIT 2137: Email chain between Stephen Stephen and Dr. Kiley

MS. PENCE: And Mr. Lunn, if you can just scroll all the way to the end we can see where this email chain starts, and it seems to start from Erin Lynch at Minister Ashfield's office and it looks like it's a request for a letter to be drafted. And then if you can just go in a little closer, Mr. Lunn, where it says:

Key messages to be included...

So it seems to be that the minister's office is asking for somebody to draft a letter that will go to the U.S. Senate and Congress and then the minister is indicating to the drafters what the messages should be.

> Testing: Our official lab in Moncton has completed the first tests and we can confirm that all samples which have previously been reported as infected with ISA have tested negative in our lab. The samples show no signs of the disease.

Then there's statements as to what should be said in the letter with regard to lab review, as well as public confidence.

And my question to you, Mr. Stephen, is is this the usual routine for the minister's office to tell staff what the message should be as opposed to staff on the ground informing the minister as to what the messages might be?

MR. STEPHEN: Well, I haven't had a lot of correspondence with the minister's office communication outside of this particular investigation and over the last few months. This was an email I received, yes, and it did include some recommended comments in sections. I was asked to draft something but I did not follow this to the letter, as you see here. My wording was to verify what we could, in fact, talk about in testing lab review and public confidence. And, of course, the lab review was being led by CFIA, so I would defer to them for comments on that section.

Q Okay. Thank you. If we could just scroll back up a little bit more, because I wanted to have you comment on an observation made by Dr. Kiley. Back to page 1, please, Mr. Lunn. Keep going a little bit. Thank you. And the part that I'm interested in is it says:

> Brian,
>
> Just forwarding you this to make a point. It is becoming more apparent that DFO MinO --

And I take that to mean minister's office.

-- may not understand that ISAV is no longer theirs. The disease is reportable under the H of A --

Health of Animals Act.

-- and CFIA takes the lead. That they may be doing a rewrite of the news release is worrisome.

And then it's signed from Dr. Kiley.

Can you comment, Mr. Stephen, on this notion that maybe DFO's minister is confused about his role as opposed to CFIA's role?

MR. STEPHEN: Well, I didn't have personal communication with the minister, but I can tell you that his staff was obviously interested in making sure a message was out that was clear and to the point. I did meet with them several times and briefed them on whose role was which within the program. They are aware of it and I would continue to reinforce that message whenever I met with them or communicated with them, as I did with our senior management, as well.

Q Do you think that there's any risks arising from this communication confusion that you're having to navigate?

MR. STEPHEN: Well, you have to imagine this is the first time we had a new minister and new minister staff. They hadn't encountered any such situation before, so it did take a few times. I did speak to Ms. Lynch personally a couple times outside of even just a ministerial office briefing to explain to her the situation, the roles of CFIA and DFO within the program. But it was a learning experience obviously for somebody unfamiliar with the operational side of our program.

Q Would you agree that this confusion could create some misreporting from DFO in regards to this situation?

MR. STEPHEN: There was a possibility if I was to not clarify the situation or others involved to clarify the situation with the minister's office. If we just let them go with an assumption that they understood everything, but that wasn't the case.

Q Thank you. If I could please turn to First

Nations Coalition document number 26, Mr. Lunn? Witnesses, this is a document entitled "ISA Virus". It seems to be a list of things done well, things done not well or not so well or things that aren't working. And then if you flip over to the next page, it looks to be some of the changeable items. So any of the panellists -- this was disclosed to counsel through this process. Can you just tell me if you recognize this document or...?

MR. STEPHEN: I don't recognize that document.

Q Presumably it was created with both CFIA and DFO.

DR. KLOTINS: No, I don't recognize this document.

Q Okay. Well, I'll just put some of the items to you then and have you comment on what it says on this page. In terms of the items not working, I'm looking at a few of the bullets there and it says:

> Working with DFO and their minister's office...

Mr. Stephen, you've commented a little bit on that so far, but I wonder if, Dr. Klotins, you might also comment on some of the aspects that are not working in terms of working with DFO and the minister's office.

DR. KLOTINS: I'm afraid I'm not in a position to comment on that because I wasn't involved with any of the communications with the minister's office.

Q Mr. Stephen, do you have anything more to add?

MR. STEPHEN: No. As I said, I've never seen this document before.

Q And on the general concept of working with DFO and the minister's office, anything further?

MR. STEPHEN: Well, as I mentioned, you had a new group of ministerial staff, minister's office staff, and they were learning as they went about how this operation works between CFIA and ourselves.

Q Thank you. There's also a point here that says, "Work with Science information". And that's indicated as something that's not working so well. It's about the sixth bullet down. Given that both CFIA and DFO are science-based organizations, what does that comment "Work with Science Information" being listed under "not" refer to?

MR. STEPHEN: I don't think we can answer that or I

can't anyway, because there's -- it's not enough detail in there to tell me what they were referring to. It could be complexity of science as many of us have heard here. A lot of the science is above our heads.

Q Okay. And there's also a bullet there that says "Result-sharing with the public". Mr. Stephen, that is something that you've been involved with in terms of briefing notes and press releases. Can you comment on why that would appear under the "not working" list?

MR. STEPHEN: Again, I don't know. I -- I can't read this without having an understanding of the discussion that arose for this general list of points.

Q Perhaps I could just ask that it be marked for ID, since I have asked some questions on it and maybe counsel from Canada could help assist at the break if there is time.

MR. TAYLOR: Well, I know I can't help with what this is, but I'm fine with it being a document for ID.

MS. PANCHUK: Doc for ID UUU.

EXHIBIT UUU FOR IDENTIFICATION: Document entitled ISA Virus

MS. PENCE:

Q I want to move now to some of the technical briefings that were provided to the media. Am I right in understanding that there were two technical briefings provided to the media, one on November 8th and one on December 2nd; is that right?

MR. STEPHEN: That's correct.

Q And that there were also technical briefings that were provided to the Canadian Council of Fisheries and Aquaculture ministers and that industry participated in; is that right?

MR. STEPHEN: I can't speak to that. CFIA has a committee with Canadian Council of Fisheries and Aquaculture ministers. They may have communicated but I wouldn't be aware of that.

Q Dr. Klotins?

DR. KLOTINS: Yes, we did have a technical communication with them.

Q Thank you. And perhaps I could pull up FNC document number 7 and this might help refresh some

memories.

Witnesses, do you recognize this as being Aquatic Animal Health Technical Briefing regarding the reported suspect finding of ISAV in B.C. and that was held by conference call on November 10th? This seems to be a summary of that. Dr. Klotins, can you confirm you attended that?

DR. KLOTINS: Yes, I did.

Q And Mr. Stephen?

MR. STEPHEN: Yes, I can, yes.

Q Dr. Wright? Your name seems to be on this, Doctor.

DR. WRIGHT: My name is on there. I'm just trying to recollect it. I can't right off the top of my head.

MS. PENCE: Could I have this marked as the next exhibit, please?

MS. PANCHUK: 2138.

EXHIBIT 2138: Aquatic Animal Health's Technical Briefing Regarding the Reported Suspect Finding of Infectious Salmon Anaemia Virus (ISAV) in BC

MS. PENCE:

Q And I see that there's also members of the provincial government there and for B.C. I see the names Barron Carswell and Gavin Last and then I also see that there's three industry reps who attended that, Mr. Rob Morley for the B.C. Seafood Alliance, Ruth Salmon for the Canadian Aquaculture Industry Alliance, and Mary Ellen Walling for the B.C. Salmon Farmers Association. Do you see that there? Were they part of that technical call on the 10th?

DR. KLOTINS: If their names are there, then they were part of that call. Yes.

Q And my simple question is why were First Nations not included as part of that call on November 10th?

DR. KLOTINS: I didn't set up the meeting and I really -- I really don't know. Sorry.

Q Mr. Stephen, any further comments?

MR. STEPHEN: No. Again, CFIA organized that meeting and I don't know what criteria they used to select the participants.

Q Perhaps you can let the commissioner know, does

CFIA or DFO have a strategy or a practice or a plan in terms of communications with First Nations on issues like this, the detection of ISAV or inconclusive test results, as it may be?

DR. KLOTINS: Yes, I know this was brought up with our public affairs people and I don't know where it's ended up. But it is definitely a new thing for CFIA and it needs to be addressed.

Q And would you support a recommendation from this commissioner that this be an area that CFIA and DFO work to improve in terms of communications with First Nations?

DR. KLOTINS: Mm-hmm.

MR. STEPHEN: If I could just add, I believe DFO does have regular communication with First Nations, not specific to infectious salmon anaemia but obviously we have aboriginal fisheries group, we have aboriginal policy group and things within departments.

Q And would you consider using the joint DFO First Nations Fisheries Council Aquaculture Working Group as a potential channel for this communication in the future? Sorry, we didn't hear you, because of the mike. Would you consider using the DFO FNFC working group on aquaculture as a channel for communications?

DR. KLOTINS: Yes.

Q Thank you. And do you agree that being clear and transparent with First Nations and with the public about what is known and still unknown are inconclusive about the test results, about the surveillance plan and about future research on issues related to viruses in wild salmon as being critical to ensuring that there's confidence in the federal government's plans?

MR. STEPHEN: As I've said before, we don't normally release preliminary results, but confirmed results. I certainly don't see any problem with consultation on surveillance plans and other things though.

Q Thank you. If I could turn now to Exhibit 2105, it's Tab 92 of the commission's documents and it's the Aquatic Animal Health Functional Plan. And Dr. Klotins, I'll just -- while this comes up, did I hear you correctly the other day when you said that this was essentially the overarching view of how CFIA conducts disease response? Is that

right?
DR. KLOTINS: Yes. It's a draft document that needs to go out for further input.
Q Thank you. And if I could turn to page 40 of this plan, it's in the Section 2.6 which is entitled "Coordination with External Parties" and it's 40 on the actual document. I'm not sure of the PDF number. There we go. And if you could just zoom in into the top paragraph there, please, Mr. Lunn, I see reference to the AAHC, the Aquatic Animal Health Committee, and it says:

> AAHC members include, but are not limited to, the Canadian Aquaculture Industry Alliance, the Fisheries Council of Canada, the Aboriginal Aquaculture Association, the Canadian Veterinary Medical Association (CVMA), Maritime Aboriginal Peoples Council, Congress of Aboriginal Peoples, provincial representatives, academia, DFO, and the CFIA.

And would you agree that you have national representation from First Nations there in terms of the congress?
DR. KLOTINS: There are more aboriginal -- national aboriginal groups that are invited to the Aquatic Animal Health Committee and they do come to our annual meetings and they do participate, sometimes on our -- we have quarterly calls during the year, as well. We're also open to having more people on this committee.
Q And would you be open to having more people in -- by way of First Nations fisheries organizations, First Nations leadership organizations from the West Coast in particular?
DR. KLOTINS: Mm-hmm.
Q Thank you.
MR. STEPHEN: If I may add that one of the ones I don't see listed here is the Assembly of First Nations which has regularly participated in the last three or four years.
Q Okay. So the AFN, as well. But why is it that you would have the Aboriginal Aquaculture Association, which I understand to be a group of First Nations who are supportive of the aquaculture industry, without having a broader base of First Nations from B.C. who may have

concerns about the industry?
DR. KLOTINS: I don't know who was initially all invited to participate, and so I can't answer to that, but certainly we have evaluated that, you know, we need to try to get more people to participate again.
Q Okay.
DR. KLOTINS: And I believe there is going to be an attempt made to increase that participation.
Q Thank you. And if I could turn to page 41 under the heading "Stakeholders". And I see it written:

> The provinces, industry, First Nations, and academia play a role on many levels, primarily in the detection and reporting of animal disease at the earliest possible moment.

Do you agree with the statement there, the role of those players in the detection and reporting of disease?
DR. KLOTINS: Again, it -- if First Nations are involved in owning -- have possession, care or control or they are veterinarians or analysts, then we do expect them to notify the CFIA.
Q And more than just in terms of the notification role, do you see them having also a role in terms of sampling, detecting the disease, as well?
DR. KLOTINS: That's quite possible and I mean we spoke a little bit about resourcing and how to -- how to maximize the resources. One of the ways is to include other groups with CFIA oversight to take samples.
Q Thank you. If I could please pull up -- it's an email, Mr. Lunn, and it's one that was circulated to all counsel on the 15th. And if you could just scroll down all the way to the beginning -- actually, you know what, I'll just give a little bit of a rundown of what this is. This here seems to -- it's a response from Keri Benner, who is with the stock assessment in Kamloops at DFO and it's a response to a request that she had, if you scroll down just a little bit more, Mr. Lunn, you'll see that Maxine is a member of the Lil'wat Nation and she had emailed Ms. Benner with questions as to -- well, she says:

Please help me understand the concerns --

And by concerns, she's referring to concerns forwarded to her by Alexandra Morton.

She's suggesting we take samples from our salmon. While I would support her idea if I could get your support, time is of the essence.

So it's, in essence, a request from a First Nations person, a First Nations Fisheries Program manager for more information from DFO on taking samples of their salmon because they have concerns about the health of salmon. If you scroll back up to Ms. Benner's response, what we see is she writes:

At this point in time we do not believe that additional sampling of salmon for ISAV is necessary.

So I'm just wondering how that response works with what we see in the functional plan which suggests that First Nations and other partners play a key role in detecting the disease.
Dr. Klotins or Mr. Stephen, if you could comment on that?

MR. STEPHEN: I'll just say that I've never seen this request. Keri Benner I don't know myself and this request never crossed my desk at all.

Q Would you be surprised that somebody from DFO is responding like this to a First Nations person asking how they may sample because they're concerned about the health of their wild salmon?

MR. STEPHEN: Well, I can't speak to that. I do say -- see that they're providing information based on the published documents and news releases and things. But as I said, we -- nobody's contacted me to indicate somebody was interested in doing this --

Q And would there --

MR. STEPHEN: -- from a First Nations perspective.

Q Sorry. Would that be a proper channel, would be to inform you to let you know that people are curious about sampling and then you'd forward them further information from the functional plan as to

how they might do that?
MR. STEPHEN: Well, obviously the surveillance plan is -- if we talk about the current surveillance plan, which I guess this is what is implied here that want to contribute to possibly something in the near future, it would be CFIA taking the lead in that. I did mention that Dr. Stewart Johnson has been providing CFIA with feedback on surveillance plan. The functional plan is still in draft and that's apart from their surveillance plan, but again, we haven't -- I haven't seen this. I'm not sure if anybody from my -- our program has seen this request.
MS. PENCE: If I could just have that marked for identification then, please? I have just a couple minutes left so I'm going to fast-forward -- sorry, can I have the letter for ID?
MS. PANCHUK: Doc for ID VVV.

EXHIBIT VVV FOR IDENTIFICATION: Email chain

MS. PENCE:
Q If I could please have First Nations document number 12 put on screen? Dr. Klotins, do you recognize this as being a paper prepared by the Assembly of First Nations commenting on the National Aquatic Animal Health program?
DR. KLOTINS: I know there was a document prepared but I haven't seen the document. Like I haven't reviewed the document or looked at it, but I believe this is it.
MS. PENCE: Can I please have this marked as the next exhibit?
MS. PANCHUK: 2139.

EXHIBIT 2139: Assembly of First Nations First Nations Perspectives: Review of National Aquatic Animal Health Program

MS. PENCE:
Q Dr. Klotins, you spoke on Friday about the concept of compensation if fish were hurt because of sampling and disease found, how would that concept of compensation fit in First Nations context when they're using fish not only for economic purposes but for food, social and ceremonial purposes? How does -- how does compensation work there?

DR. KLOTINS: I can't answer in specifics. We would need to discuss with them what they -- what actually -- what the situation is, whether we would -- it's -- we pay the owner of the fish. So if they happen to be the owner, then there is that possibility. If they're not the owner, government does not pay government for compensation.

Q If we could just scroll to page 3 of this and then I will sit down. Sorry, page zero. Just behind the cover page there. If we just scroll up a little bit -- I'm sorry, Mr. Lunn, the bottom paragraph. I'm jumping around there.

Do you see that the AFN did bring it to the attention that NAAHP should prepare compensation strategies for situations where First Nations access to fish is lost? Is that something that you will take more consideration into, given these comments from the AFN?

DR. KLOTINS: Yes, we will. In terms of access to fish is lost, we have also mentioned in the functional plan that no disease response that involves eradication or destruction of fish will be done without -- well, without discussion or with the governments that are -- have jurisdiction over the fish.

Q Including First Nations governments?

DR. KLOTINS: Yes, if --

MS. PENCE: Thank you. I'm out of time. Those are my questions.

DR. KLOTINS: Okay.

MR. MARTLAND: Mr. Commissioner, next we have counsel for the Sto:lo and Cheam with 15 minutes.

MS. SCHABUS: Mr. Commissioner, Nicole Schabus for Sto:lo Tribal Council and the Cheam Indian Band.

CROSS-EXAMINATION BY MS. SCHABUS:

Q Panellists, I represent, as I said, the Sto:lo Tribal Council and the Cheam Indian Band and both Cultus Lake and the Harrison River are in Sto:lo territory, which covers much of the Lower Fraser and its tributaries in the area.

I hope you are all aware -- and can you all confirm that you are aware that the Cultus Lake sockeye salmon is endangered?

MR. STEPHEN: I'm not a specialist on West Coast salmon. I grew up on the East Coast, so I can't.

DR. KLOTINS: I can't comment on that.
DR. WRIGHT: No, I can't comment either.
Q Dr. Jones, I hope you can.
DR. JONES: Yes, I am aware of that.
Q And you're also -- you might want to stay close to that mike because I'm going to have to ask you a few questions. Or whichever mike works. I don't --
DR. JONES: Okay.
Q Okay. Let's just leave it on. You're aware that there has been a significant effort and investment in restoring and rebuilding Cultus sockeye stocks?
DR. JONES: Yes, I am.
Q And throughout the last decade and leading up to that, correct?
DR. JONES: Mm-hmm.
Q And you're aware that DFO partially funds some projects like the DFO project for survival of Cultus Lake sockeye?
DR. JONES: In general I'm aware of that. Not the specifics.
Q And you're also aware that the Soowahlie First Nation and the Sto:lo people are partners in this project and have been very actively collaborating in it.
DR. JONES: I wasn't aware of the specifics, but I have no reason to doubt that.
Q But you're aware that there is strong First Nations collaboration on this project on the ground, correct?
DR. JONES: Yes.
Q I take your nodding to be a "yes". And you're also aware that the DFO project includes assessment of fry, smolt and adult populations and their spawning behaviour?
DR. JONES: Again, I'm not aware of the specifics, but I take your word for it.
Q But you were the supervisor overseeing Dr. Molly Kibenge's work, right?
DR. JONES: That's correct.
Q And in order to access samples, and I understand the samples that were accessed were spawning Cultus Lake sockeye?
DR. JONES: That's correct.
Q So in order to access those, you have to work with DFO and the First Nations staff on the ground to be able to access them, right?

DR. JONES: Almost certainly we did.
Q Okay. And so you collect -- you have those samples collected, but you never -- you're not aware of -- you didn't and you're not aware of anybody else in DFO advising Soowahlie or the Sto:lo of positive findings of ISA virus in 2002, 2003 in Cultus sockeye or since.
DR. JONES: That's correct. We did not do that.
Q You also never notified the DFO Cultus Sockeye Recovery Team?
DR. JONES: Not based on the findings that we obtained, no.
Q Although their DFO project includes considering disease as a factor in the decline of the Fraser River -- of the Cultus Lake sockeye salmon?
DR. JONES: I'm very much aware of that program and we saw no evidence of disease and for that reason there was no reason to report.
Q Okay. We don't have to go over the semantics of it, but we've already discussed that there has been a positive finding that happened at your station and -- at Pacific Biological Station, correct?
DR. JONES: Well, I think it is important to go over the semantics, because we -- I -- we demonstrated that the -- in very high likelihood the positive PCR result was a false positive.
Q Well, did Pacific Biological Station do any of that?
DR. JONES: Yes, they did.
Q They did the sampling on it? They actually did sampling that found the positives, right?
DR. JONES: We did the analysis on the samples.
Q That found the positives?
DR. JONES: In which the PCR samples were positive, that's correct.
Q Okay. And you did not notify the Cultus Recovery Team of that, although you were aware that they were considering disease as a factor in the decline of the Cultus Lake sockeye?
DR. JONES: Well, I think it's very important that we distinguish between what we found and disease. We found a PCR positive result. On further examination of those positive results we determined through sequence analysis that they were not true positive results and we saw no evidence of disease that was consistent with ISA

virus.
Q We've all agreed that in light of the findings in 2002 and 2003 and the findings that we're having now, that it is very important to conduct further research, right?
DR. JONES: Based on what we know now, I think that's a very -- that's a very important thing to do.
Q And so at the time you did not advise them of any of those positives, right?
DR. JONES: That's correct.
Q And one of the things that you told us is -- in your testimony now is you said you would like to have seen some further research on what was going on with the different assays for ISA virus in the salmon that were sampled in 2002 and 2003?
DR. JONES: Well, it was actually samples we analysed in 2003 and 2004 but, yes, I think based on what we know now, there's a very good reason and a highly compelling reason to explore exactly what these tests were finding. Was it a deficiency of the diagnostic test? Or were the diagnostic tests that were applied, were they finding something that was ISA-like? We simply don't know. For those reasons, I think it's important to pursue this.
Q You're trying to pull this into today, but I want to stay with then.
DR. JONES: Mm-hmm. Okay.
Q And you were saying you were a little bit disappointed that none of this happened because this is exactly what you would have liked to have seen happening then, right?
DR. JONES: I --
Q You were saying you would have liked to see your collaborators look into what was going on with the different assays at the time, right?
DR. JONES: Had Dr. Molly Kibenge stayed in the lab, this would have been an important part of the further research she would have conducted, is trying to understand why when we send samples to another laboratory that they come back negative, why is that? It would be a very important part of the research, to explore the inconsistencies in the tests that we were using.
Q But -- sorry, I don't want to cut you off, but also, there were positives that were found at your lab, right?

DR. JONES: We did find positives at our lab.
Q Now, you never provided such a recommendation at the time?
DR. JONES: Well, we didn't stop there. After we found those positives, we conducted further investigations and determined, based on those further investigations, that there was a high degree of unreliability in the positives that we found.
Q But already then you saw an issue with the different assays with the different results coming back from different labs.
DR. JONES: Mm-hmm.
Q And you were suggesting that one of the things that you would have liked all the collaborators to do - and that actually includes you, Dr. Garver, who was one of the co-authors of the paper, and the two Kibenges, to actually look into what's going on with the assays because there could be an issue there, right?
DR. JONES: Well, Dr. Garth Traxler was one of the court-authors of the paper.
Q Oh, sorry. Wrong Garth.
DR. JONES: Yeah.
Q Sorry. But anyways, that's -- you were suggesting that is something you would have liked to have seen, right?
DR. JONES: As a scientist, I think that's very important, yeah. I do.
Q And as a scientist, you never made that recommendation at that time?
DR. JONES: We did discuss that, but I can't -- well, I have no reason to question what Garth Traxler and the other members of the virology program decided to do.
Q But you didn't follow up on it.
DR. JONES: I didn't personally, no.
Q You're also aware of teams and scientists working on specifically Cultus Lake sockeye, correct?
DR. JONES: That's correct.
Q And you never contacted them about the finding at the time?
DR. JONES: No. Because, as I said, there was no reason to contact. There was no evidence of disease or no evidence that this should be something worthwhile or following up on --
Q Well, how about contacting them to get some more

samples and do some more testing in good scientific tradition to make sure and follow a precautionary approach?

DR. JONES: Well, that's a possibility. We didn't explore that.

Q You didn't explore that. So you did not get any more samples or do ISAV-related research and work following up from 2003/2004 you're telling me, until today?

DR. JONES: No, not since 2004.

Q Okay. I suggest you leave your mike on, but I'm -- I'm going to open it more to the other panellists because we're fast-forwarding now nine to seven years from the Cultus findings and I'm suggesting an opportunity missed to work on proper testing and doing more research over a period of this time that -- to this period now, where we have positive samples from the Harrison River, again in Sto:lo territory and testing, positive testing, for ISAV from two very prestigious labs specialized in the field.

Again, you did not notify the Sto:lo people or the Sto:lo Tribal Council of the findings? I'm opening this to the panel.

MR. STEPHEN: I'd like to repeat that again, we don't report presumptive or unconfirmed results. We have to follow up. We've followed up on every case so far outside of Dr. Miller's most recent results. We've investigated each set of results that have been brought to our attention or CFIA's attention and until we can actually confirm that ISA exists, there's nothing to report.

Q Well, I'd like to open up the picture a little bit bigger. We are talking about fisheries management generally within this commission. This is a specific issue. But we've had a lot of debate about involving First Nations in decision-making and obviously there have been a lot of decisions that have been taken over the last two, three months regarding this issue that is directly connected to Sto:lo territory, yet none of you and none of your higher-ups or the decision-makers in the field has contacted the Sto:lo people in whose territory these findings have been made to inform them about the findings that have been made so far or to involve them in the decision-making that followed, correct?

DR. KLOTINS: We have not involved the Sto:lo Nation. We didn't realize there was an agreement to do so.
Q Or an obligation? I'm not suggesting there's an agreement. I'm suggesting there's an obligation to involve them and to share information with them so you can have informed decision-making.
DR. KLOTINS: Well, now that we know and, in fact, one of the activities that we're going to do with the functional plan and with disease response plans, is start to form agreements on -- with partners and industry that need to be part of the disease response on the roles and responsibilities.
Q And you'd agree that the respective First Nations people in whose territory there have been some positive samples -- findings and generally in whose territory you are suggesting to do more research, including Weaver Creek, should be involved in this planning and decision-making?
DR. KLOTINS: Yes. Well, in terms of the surveillance, they will be, and we'll be engaging First Nations more and more in our program.
Q You haven't talked to them about that yet though at all?
DR. KLOTINS: About the surveillance?
Q Yeah.
DR. KLOTINS: No. We're doing the initial plan, so we have something to bring out to people that need to know and then they'll comment on that.
Q A good start would also be to let them know as the research is happening about what's going on, but you haven't done any of that to date, correct?
DR. KLOTINS: No.
Q Okay. Now, I'm going to stay with you for a moment. In October 2011 I'm going to just deal with the Harrison samples. Your office, CFIA, asked where and why the fish were collected, correct?
DR. KLOTINS: Sorry?
Q In October 2011 when it came to the Harrison samples --
DR. KLOTINS: Mm-hmm?
Q You sent a request out asking where and why the fish were collected to the person who had collected the samples, correct?
DR. KLOTINS: Yes, to Alexandra Morton.
Q And Dr. Morton told you that she had been contacted by people who were concerned about many

dead salmon floating in the Harrison River in Sto:lo territory drifting down the Harrison and that the samples were collected between Harrison Mill and Weaver Creek, correct?

DR. KLOTINS: Actually, we got no response back on that, no directly -- direct response back on that. But unless you -- we have that email, there was one email.

Q I think there's a letter dated October --

DR. KLOTINS: Okay.

Q -- 28th, 2011 that would be on file --

DR. KLOTINS: Okay.

Q -- regarding that. But you've confirmed where the samples came from, right?

DR. KLOTINS: If that -- if she indicated that in the letter, then it was there.

Q And you're aware that there was a concern about many dead salmon floating down the Harrison River at the time and that's why the samples were collected, right?

DR. KLOTINS: That's what they indicated, yes.

Q Now, that issue of the fish floating down the Harrison River and into the Fraser was actually also brought up at the Cohen hearings and I'm going to put this question more to the DFO witnesses because there was some finger-pointing going on at the time regarding our clients, but I take it DFO never advised that there is an alternative fish health related explanation to those floating fish? Are you aware of that, DFO advising that there is an alternative fish health related explanation regarding the floating fish and you investigating that?

DR. JONES: No, I'm not aware of any dialogue on that issue.

Q But that is something you're considering now, right?

DR. JONES: Well, no, I'm not involved in that decision-making process but this is perhaps -- would not be an unexpected --

Q Okay.

DR. JONES: -- step forward.

Q Now, you've heard that First Nations are concerned and they want to collect samples and have them properly -- have them properly tested, yet DFO to date has not encouraged such sample collection, correct? And as we saw in the email that was just

marked for identification has been kind of using the media lines to downplay the crisis and say well, at this stage we're not...

MR. STEPHEN: I'd like to speak to that. I don't know why people are calling it a crisis. As I've repeated multiple times in the last day and a half that we have not confirmed in any way, shape or form that ISA is actually in B.C. yet. There are presumptive positives, there are suspect positives of results from a number of different laboratories, but we have not been able to confirm, to provide enough information for CFIA to render a decision that ISA is in B.C.

Q But -- sorry.

MR. STEPHEN: So calling everything positive samples, I think the better approach is to call them presumptive positives because we cannot confirm any of those. We have not been able to confirm any of those results yet.

Q But in order to actually get to the bottom of issues, it would be nice to collect some more samples and have First Nations involvement in it, since they are the people on the ground, correct?

DR. KLOTINS: Well, that's one avenue to explore. The other avenue is you can actually do more, perhaps more work on the actual assays themselves in the laboratory setting and identify why you're picking up -- why we're getting these positive hits.

Q And my last question and I'm -- I would be ready if Mr. Lunn was, I have one last exhibit. If you could bring up Exhibit 2065 and I think, Dr. Jones, you'll be able to help me identify that. That's the suggested survey and research plan that you've been working on or discussing at PBS? If you need to see the cover email, I can bring it up. You were copied on it and it was to follow up on previous conversations.

Mr. Lunn, just to refresh the witnesses' memory, if you could bring up 2064, the previous exhibit. You can see yourself copied on that email and you've reviewed that before?

DR. JONES: Yes, I recognize the document. It was sent to me and I think I received it -- well --

Q Are you aware --

DR. JONES: -- on the 8th.

Q Sorry. Are you aware, going to the exhibit, of First Nations being consulted whether they feel

that the hypothesis for the survey and the research are properly stated?

DR. JONES: Which specific hypothesis are you referring to?

Q Let's look at the very -- at the very top. There is a number of them listed there.

> To confirm that ISA virus is not present in B.C. waters.
>
> To confirm that IPNV is not present in B.C. waters.

And:

> To obtain additional information on the prevalence and distribution of IHNV in populations of B.C. wild salmon.

So I'm going to put an issue to you that I'm seeing there. Obviously those hypotheses are differently phrased. One that kind of infers a conclusion that while we know that your PBS has had confirmed IHNV, you are suggesting that the others are not present. But how could you ever test for that?

DR. JONES: Well, I disagree with your assertion that by stating an objective is to confirm that something is not present would be the right way to state that, because all you need to do is detect and confirm the presence once and you've answered that question.

Q Okay. So why are you stating the two differently, the research hypothesis for ISAV versus IHNV?

DR. JONES: Well, because we know IHNV is an endemic pathogen in British Columbia waters and the role of this exercise perhaps is to provide more information on exactly how this pathogen is distributed in the province.

Q And so just to close and to confirm, you have not discussed these research hypotheses with First Nations and you have not involved them in the contingency planning, correct?

DR. JONES: I --

Q Research and contingency planning.

DR. JONES: I received this document. I have not been involved in its development. But I am aware of

the document.
MS. SCHABUS: Thank you. Those are my questions.
THE COMMISSIONER: Thank you. Mr. Commissioner, next we have counsel for the MTTC with ten minutes.
MS. ROBERTSON: Krista Robertson for the Musgamagw Tsawataineuk Tribal Council.

CROSS-EXAMINATION BY MS. ROBERTSON:

Q So I have three sort of themes of questionings, starting with you, Dr. Klotins. And this is just a really follow-up further on the questions from my friend, Ms. Pence.
I take it then that when CFIA receives notice of a suspected disease there's no policy to notify First Nations whose fishing rights might be affected now? At this time there's no policy, but there's an interest in developing one; is that what I heard you say?
DR. KLOTINS: Well, there is some notification of suspect to provincial governments and to the Canadian Council of Aquaculture and Fisheries ministers. If that requires to be expanded, then we need to know about that.
Q So if it -- if your notification obligations need to be expanded, then you would be waiting for another agency to advise you of that?
DR. KLOTINS: Well, no. If we need to -- if First Nations are owners of these animals and they have jurisdiction over what happens with them, then we need to include them.
Q But presently there's no process or policy to do that?
DR. KLOTINS: No.
Q And when we're talking about -- to clarify, when we're talking about ownership, what I'm talking about is a First Nations who asserts a fishing right --
DR. KLOTINS: Mm-hmm.
Q -- a proprietary right --
DR. KLOTINS: Mm-hmm.
Q -- over a particular stock --
DR. KLOTINS: Mm-hmm.
Q -- is that what you understand me to be asking?
DR. KLOTINS: I guess I need clarification on that, but we were going to work that through the disease response emergency plans that we develop with

provinces and other stakeholders who need to be involved in disease response.
Q Right.
DR. KLOTINS: But if we -- and usually that includes the communication pathway there and we have not yet engaged in discussion with First Nations. We're putting that plan together. We've just identified at least all the tribes or tribal councils that will be involved and information will be hopefully going out in the New Year.
Q Okay. So that would include, for example, having some kind of mapping system so that you knew which First Nations to communicate with. So, for example, with the Dr. Routledge samples, that was the Wiekanu (phonetic) First Nations territory.
DR. KLOTINS: Yeah.
Q So did you have any communication with the Wiekanu or any kind of ability to even know which First Nations you should be working with?
DR. KLOTINS: No, not at that time. But since then we've been working with INAC to get a list of all the tribes and they will be receiving information and we'll be asking them if they're interested in the NAAHP program and working with the CFIA.
Q All right. Mr. Stephen, now you've spoken a lot today about this not notifying the public when there's preliminary results. Would you be prepared to enter into a protocol with First Nations to notify, for instance, my clients, who are residing in the Broughton Archipelago, where there's approximately 30 salmon farms in their territory. If they asked for that, would you be prepared to enter into a protocol with them so that they were given early notification about a preliminary finding, as my friend, Ms. Schabus, says, towards kind of sharing in the management decisions and the responses?
MR. STEPHEN: I'd certainly be willing to have a discussion with CFIA because they are the ones who do the notification. DFO doesn't notify under the National Aquatic Animal Health Program. It's CFIA who does the communication and lead on the investigations of any suspect cases.
Q Right. But DFO would become aware, either through your labs doing testing -- I mean, there's many ways that DFO would need to be in the loop when a notification like that happens and DFO is dealing

quite regularly with First Nations on fisheries management issues?

MR. STEPHEN: Yes, which is why in consultation with CFIA on their proposed surveillance plan, I've asked Dr. Stewart Johnson to engage our aboriginal policy group and aboriginal fisheries groups to provide input into CFIA with respect to surveillance and other things.

Q All right. Thank you. Mr. Lunn, could we have Exhibit 2139, please? This question is for you, Dr. Klotins. If we could go to PDF page 5, please. And just scroll a little further down to the bottom. And I'm looking at the second bullet there under "Suggestions". The bottom -- at the -- okay. We can read it. It's the second bullet down there:

> CFIA should provide a list of all certified labs in the country for circulation to all First Nations communities engaged in fishing activities.

So we've looked at this document. Ms. Pence put it to you. So this is recommendations from the Assembly of First Nations around the plan. Now, what the question is is we've talked quite a bit about the chain of custody concerns. I take it that this recommendation is to enable First Nations to have access to know which labs to go to if they want to have testing. So considering, and as Ms. Schabus says, First Nations are out there, they're on the water, they have traditional knowledge of the fishery, is CFIA going to raise this chain of custody concern if First Nations are bringing samples? And how would you -- how would you suggest we get around that then, such that First Nations do have access to labs where they can have their fish tested when they have concerns and the results will be recognized by CFIA and DFO?

DR. KLOTINS: If this is -- if this is important to the First Nations we'll be sharing information with and they're interested, then we can develop a program that that oversight could be provided. Usually, though, it is CFIA that sends samples into our certified laboratories, so it may be that instead of going directly to the laboratory they

may be dealing with the inspectors first out in the region and coming up with a plan and engaging in sending it in.

Q The First Nations may be dealing with the CFIA inspectors?

DR. KLOTINS: Yeah. We have field staff, so I belong to programs and design the program and report on its performance and it gets implemented by our operational staff out in the areas.

Q So that would be their first point of contact, not DFO? It should be CFIA in your view?

DR. KLOTINS: For our regulated diseases, yes.

Q All right. Thank you. So moving on to another theme, Mr. Stephen, in the aquaculture hearings and then just last week we've heard evidence that in respect of DFO's audit program for salmon farms, the testing agency that DFO uses is the B.C. Fish Health Lab; do you understand that to be correct?

MR. STEPHEN: That's what I understand but I am not involved in that program.

Q Okay. Well, I put it to you that's the evidence. Mr. Lunn, if we could call up Exhibit 2120, please? No, that's not -- yeah, that's... Okay. What I was looking for was the OIE process for the validation. That's the document that I was hoping would be there. No, but I'll just describe what I have here. It's the -- I'm sure you're familiar with it. It's the validation pathway for the NAAHLS diagnostic test methods for ISA.

MR. MARTLAND: Exhibit 2000 is our note.

MS. ROBERTSON:

Q Oh, Exhibit 2000. Thank you. And what this document -- there it is. Thank you. This document then is -- and when you go through the document - we won't do that - but it lists -- the process that the Moncton lab has gone through to be validated by the OIE procedures with respect to the ISAV testing. And you've stated in your evidence earlier that with respect to Dr. Miller's testing, part of the reason your office had difficulty recognizing that is because they're outside -- the test -- the assay she used was outside that validation process; is that correct?

MR. STEPHEN: I think it would be better for Dr. Wright - he's our national lab manager - to answer any questions around the validation pathway and

testing.
Q Dr. Wright, is that -- do you agree that that was one of the reasons, one of the concerns, as to why Dr. Miller's results are being questioned? They weren't -- they didn't follow that validation pathway?
DR. WRIGHT: In order to be considered as part of any diagnostic regime, any tests that are going to be used will have to be validated according to that pathway. That is the recommendation from the OIE. This is where you get your Stage 1 analytical validation, your Stage 2 diagnostic validation. This is a test that she's put together very recently. I would certainly encourage her that if she's considering that it should be considered as any part of a diagnostic routine, that she needs to follow this pathway. Otherwise, we have no information on which to determine whether or not it's validated as fit for purpose according to the OIE guidelines.
Q But the B.C. lab, the assay that they use, isn't validated either, is it?
DR. WRIGHT: No. But we're encouraging anybody - and I'm speaking from the OIE perspective - that they should, whether they can populate that -- I mean, this is a template and it could very well be that they have that validation data in bits and pieces that need to be fed into that template so you can actually see the flow. Whether they've done it or not, I don't know. But we certainly encourage people to do it.
Q But you're not --
DR. WRIGHT: So it is one way and that when anybody comes in with questions whether it's a trading partner audit or whether it's a quality audit, that you have all of your evidence in one place and every year, because it's a quality document, it should be reviewed and updated because it's an ongoing process. And you'll be able to add more validation data to it on a year-to-year basis or more frequently if you want.
So it becomes a living document but at least for the analytical bits and pieces and the diagnostic bits and pieces, if there's a new strain that comes up, the expectation is you will enter that data to show that you can detect that strain. But you have to start somewhere and

especially with new tests, I mean, there are many tests out there in the world, whether terrestrial or aquatic, where you will not find this dossier because many of them have been grandfathered in. They've been used for the last six or seven years.

Q So does this mean --

DR. WRIGHT: But if they're ever challenged they should be able to come up with those criteria and have them fulfilled in that type of pathway.

Q So are you concerned that at the moment, the lab that DFO relies on to test its auditing samples from the salmon farms, hasn't been validated in that manner?

MS. CALLAN: I'm just going to step in. This is Tara Callan appearing on behalf of Her Majesty The Queen in Right of the Province of British Columbia. As far as I understand, I think this question is misleading in the sense that there is no evidence that it's not validated. On the contrary, it has been validated.

MS. ROBERTSON: Could you, Ms. Callan, point to the evidence where it has been validated?

MS. CALLAN: Well, there was the document that talked about the primers and the validation that occurred. I believe it's provincial tab 10. And also, there are no provincial witnesses on the panel, but suggesting that it's not validated without the proper evidentiary basis in the Province's submission, is incorrect.

MS. ROBERTSON: What I heard yesterday is, in fact, Dr. Kibenge and Dr. Nylund both are -- or, pardon me, last week, both indicated that they'd never heard of the test. So I'm going to just move on because I'm running out of time here and I have one question left.

Dr. Klotins, I understand the mandate of CFIA to be to protect animal species from disease while at the same time protecting the trade interests of companies operating in Canada; is that correct?

DR. KLOTINS: It's actually to facilitate safe trade of aquatic animals. It's not to protect the interests, but it's to facilitate safe trade by working on negotiations for technical market access.

Q Safe trade. But is it also part of the mandate of the CFIA to ensure that trade is -- trade interests of Canadian companies or companies

operating in Canada such as Norwegian fish farm companies, are not harmed by any kind of finding or allegation of disease?

DR. KLOTINS: It's -- it's not the viewpoint of them being harmed. It's to basically negotiate technical access, technical market access for aquatic animal health. So if, let's say, we do find ISA in B.C. and all of a sudden markets are closed, our role is then to try to renegotiate or negotiate market access to those countries. Now, what it will be is a matter of they'll let us know what the requirements are. We'll let them know what we can do and whether we can meet that market access. If we can't meet it, then there will be no trade basically.

MR. STEPHEN: If I could add, there's been a continuing theme that there's an appearance at the National Aquatic Animal Health Program it's only for aquaculture. In fact, the activities that CFIA engages in in discussions with foreign countries to deal with trade issues can protect wild Dungeness crab, wild lobster, shellfish in B.C. It's not just for -- and wild salmon in B.C. It's not just for aquaculture. This program is for all fish in Canada.

Q So you don't see any conflict between a mandate to protect trade on one hand and to protect animal species on the other? You don't see it that way?

DR. KLOTINS: Well, I would argue that it's not protecting trade. It's facilitating trade. So we do our best that we can negotiate market access, as well, as long as we can meet the requirements of the importing country.

MS. ROBERTSON: All right. Those are my questions. I'm out of time. Thanks.

MR. MARTLAND: Mr. Commissioner, there's re-examination by Canada and ourselves. I'm optimistic if the witnesses are able to be as succinct as possible, it's 4:17. We may yet complete this by 4:30.

Mr. Taylor?

MR. TAYLOR: Thank you. I have an estimate of about ten minutes, Mr. Commissioner.

Exhibit 2126 is the call log that was raised this morning where one of the boxes had missing information from it. I believe Mr. Lunn now has a cover email and there might be an attachment to that, as well. I can't remember. When it comes

up, what it does is explain that no one can get the full box pulled up from the computer to then be relayed over here so they've got the text in this email that should come up and my proposal is that we make what I have provided an "A" exhibit, so I would suggest 2126A, but first we need to see it. This is the box that doesn't have all the text, but you should have an email that explains what we can't do and provides all the text. Maybe we could put what you do have on the screen to one side and put the email to the other. If you want, I can come back to that, Mr. Lunn.

Excellent. We have a whole person's email account now. Yeah. Are you able to show the whole of the email? Yes. There we go. So the bottom line is, as I say, we can't get that box up on the computer but this is the text, what would be in the box if it was there, and I propose that this email be an "A" exhibit and I think Mr. Martland's okay with that.

MR. MARTLAND: Yes.

MR. TAYLOR: So that would be Exhibit 2126A, that is the email and I suppose since it seems to have come all together, the attachment which I think is the abbreviated box. Thank you.

EXHIBIT 2126A: Email from Geneva Grande-McNeill dated December 19, 2011 and attached text

CROSS-EXAMINATION BY MR. TAYLOR, continuing:

Q Now, Tab 18 of Canada's book of documents was the 2004 Molly Kibenge transcript. Dr. Jones, this is a question of you. You were asked by I think it was Mr. McDade about sockeye, specifically Cultus Lake. It might have been Mr. Rosenbloom, but do you remember those questions?

DR. JONES: Not specifically, no.

Q Okay. Well, let's see if I can refresh your memory as we head into this. If we bring up the 2004 manuscript, and I'm sorry, Mr. Lunn, I've not got on my piece of paper the exhibit number and Mr. Martland's attention is on something else. The 2004 transcript with the authors named. Exhibit number...? I think you've got it. Page 11. Yes. Now, you remember this, Dr. Jones?

That's where sockeye is addressed?
DR. JONES: Yes, I do.
Q And then if we go along two pages, I think it is, to a table on page 13, and if we can look at that, I think it's coming right side up. Yes, thank you. You'll see there sockeye which is the -- going down the columns, what is that, the fifth line, I think. Am I right that sockeye is showing negative for VI, negative for DE, wherever those places are, and there's a positive indicator for CL which is Cultus? Have I got that right?
DR. JONES: That's what that shows, yes.
Q Okay. Now, you referred in your answers to either Mr. McDade or Mr. Rosenbloom to an email by Molly Kibenge where she spoke about those results she obtained pertaining to Cultus and if we could go, Mr. Lunn, to the second document in Canada's Tab 18 which is an email.
MR. LUNN: I'm not sure I have that portion of Tab 18. I'm sorry.
MR. TAYLOR: Oh, dear.
MR. LUNN: Yes. I apologize.
MR. TAYLOR: Well, what do you have at Tab 18?
MR. LUNN: I have the second version of this same paper which I'm putting up now. These are the two portions of Tab 18 that I have in front of me.
MR. TAYLOR: All right.
MR. LUNN: I understand you have it in hard copy.
MR. TAYLOR: Well, I think I'm going to have to come back to it. Well, there won't be any coming back, I guess, because it's the last session. What I'm going to propose is I simply show a piece of paper. In other words, use the old-fashioned means to the witness and we'll go at it from there. Any counsel want to see it can perhaps gather round. I'm going to ask if I may, Mr. Taylor, the other Mr. Taylor, to pass it to Dr. Jones.
Q My question of you as it's coming over, Dr. Jones, is whether you recognize that document.
DR. JONES: Yes, I recognize it.
Q Okay. Now I'm without it, so I'm going to have to get you to help me. What's the date of it? Who is it to and from?
DR. JONES: The date is March the 5th, 2004. It's from Molly Kibenge and it's to myself.
Q All right. And it's quite short, so so that

everyone is clear, I think we'll need to get you to read it into the record, since we can't bring it up on the computer screen.

DR. JONES: [As read]:

> Hi Simon,
>
> Five out of six clones had got good sequences. The sockeye clones do not resemble any ISAV isolate. Only the primary sequence is 100 percent ISA. Two clones from Atlantic salmon heart are 98 and 92 percent, identical to Canadian and European ISAV isolates. I also rerun RT-PCR on the other AS samples (spleen, kidney and liver). They give one band product of 220, however the control mix was positive too. The sockeye clone sequences show homology to short sequences of human, mouse, rat and zebrafish clones. I will be up shortly with the printout.

Q All right. Now, is that the email that you were alluding to when you were answering other counsel's questions earlier when you said that Molly had written something or said something about the Cultus Lake results?

DR. JONES: Yes, this is the email.

Q And that email is in relation to Cultus Lake, I take it?

DR. JONES: That's right, yes.

Q And what do you draw from what's said in that email?

DR. JONES: Well, what this email is telling me is that the PCR results were evidently a false positive result, based on the subsequent sequence analysis. I also note that because the control mix was positive too, that indicates that the apparent findings from Atlantic salmon may have been the result of some form of contamination. The reason we run controls is to ensure that the test is performing properly.

Q All right. Thank you. Now, you can just keep that for now and we'll get it -- actually, I need to mark that as an exhibit.

MR. TAYLOR: I'm in your hands, Mr. Martland, how we actually mark paper as an exhibit.

MR. MARTLAND: My proposal would be to simply do so, unless someone raises an objection to it.
MR. TAYLOR: All right.
MR. MARTLAND: It's email, like others we've had in.
MR. TAYLOR: All right. Perhaps the best thing is that we mark it as an exhibit and immediately hand it to Ms. Panchuk, so we don't lose it.
MR. MARTLAND: Sounds wise.
MR. TAYLOR: There is also some yellow and green on it, which is nothing to do with the substance and that was put on after the email was created. So Ms. Panchuk has the exhibit, which is now number...?
MS. PANCHUK: 2140.
MR. TAYLOR: Thank you.

EXHIBIT 2140: Email from Molly Kibenge to Dr. Jones dated March 5, 2004

MR. TAYLOR:
Q Now, Dr. Klotins, Mr. McDade asked some questions about timelines and just to assist with timelines, I'm going to ask if we may bring up in either succession or together, commission tab 65, 66, 67. And my question, Dr. Klotins, but if others on the panel have something to chime in with, by all means, but I think this is of Dr. Klotins when they come up, if you recognize these documents which should be two flow charts, time flow charts, and then a work flow chart. I think this is 67, is it? And here's 66, and 65 is going to pop up, I suspect. There we go.
Dr. Klotins, okay, maybe without losing any of them, are we able to look at all of 65 at once, just so the witness can get her mind around it? Do you recognize this, Dr. Klotins?
DR. KLOTINS: Yes, I do.
Q And what is this?
DR. KLOTINS: It was a timeline we put together on when we understand -- when we were notified of the suspect or preliminary ISAV positive findings by Dr. Kibenge's lab and the information that we gleaned from Dr. Kibenge and from others in terms of when Dr. Kibenge notified the client first, when we contacted Dr. Routledge, when we collected the samples and --
Q Yes, all right. We don't need --
DR. KLOTINS: -- sent them to --

Q -- to go through each item but --
DR. KLOTINS: Okay.
Q -- that's what it is, it's a timeline of the various events, is it?
DR. KLOTINS: Mm-hmm.
Q And just to assist you, this is in regard to the Rivers Inlet samples, I take it, from the upper right?
DR. KLOTINS: Yeah. Basically the samples that were collected by SFU and UBC.
MR. TAYLOR: All right. Could that be the next exhibit, please?
MS. PANCHUK: 2141.

EXHIBIT 2141: Timeline ISAV #1

MR. TAYLOR:
Q And then if we look at Tab 66 of the commission binder and my question, as it's coming up, is this the same kind of document but as regard the Weaver Creek samples?
DR. KLOTINS: Yes, it is.
MR. TAYLOR: If that could be the next exhibit, please?
MS. PANCHUK: 2142.

EXHIBIT 2142: Timeline ISAV #2

MR. TAYLOR:
Q And then 67 is a slightly different document. It appears to be a work flow chart as opposed to an events flow chart, but you tell me. What is this?
DR. KLOTINS: It speaks more specifically to the sample collections that we did for this investigation
Q All right. And you've --
MR. TAYLOR: May that be the next exhibit, please?
MS. PANCHUK: Twenty --
MR. HARRISON: Judah Harrison for the Conservation Coalition. I'd just like to get clarification from you what you are redirecting with respect to. Thank you.
MR. TAYLOR: Mr. McDade was raising questions about timelines and suggesting or had various suggestions about what was happening when and these are to assist with clarifying that and they're documents raised more or less -- created more or less contemporaneously.
MS. PANCHUK: 2144 (sic).

MR. TAYLOR: All right. Thank you.

EXHIBIT 2143: Work flow timeline

MR. TAYLOR:
Q Now, Dr. Klotins, for each of these documents, the last three documents we've looked at, you've seen them before and you're familiar with them, are you?
DR. KLOTINS: Yes, I have.
Q And are they accurate to the best of your knowledge?
DR. KLOTINS: To the best of my knowledge, but I didn't review the final versions.
Q All right. Could we have commission tab 100, which is the surveillance plan and the draft and it's also got an exhibit number.
MR. MARTLAND: And I think we may need to assign additional exhibit numbers to the two other documents. Or is that a misunderstanding?
MR. TAYLOR: I thought we did.
MR. MARTLAND: Okay.
MS. PANCHUK: We did. Actually, the previous exhibit should be 2143, not 2144.
MR. TAYLOR: I'm just going to try and run this by and see if the record gets clear. Hopefully I will achieve that.
Commission tab 67, I'm going to go backwards because I have a short memory, commission tab 67 is 2143?
MS. PANCHUK: That's right.
MR. TAYLOR: Commission tab 66, 2142?
MS. PANCHUK: That's right.
MR. TAYLOR: Commission tab 65 is 2141.
MS. PANCHUK: That's right.
MR. TAYLOR: Thank you. Surveillance plan commission tab 100, exhibit -- it's up here. I'm not sure what exhibit it is.
MR. MARTLAND: 2112?
MR. TAYLOR: 2112. Thank you.
Q Mr. McDade was asking you about where samples were taken from and focused on Weaver Creek and there's a chart in here -- or were going to be taken from. There's a chart in here, page 20, document page 20, I think, yeah. And if you look there under sockeye, if we could see all of sockeye at the bottom there, you'll see in the middle, Dr.

Klotins, Areas B and D, there's going to be samples taken. Those are fishing areas in the southern part of -- southern part of I think it's Georgia Strait, perhaps the West Coast too, but Georgia Strait and more specifically they're Mr. Rosenbloom's clients. You're familiar with that?

DR. KLOTINS: Yes. The idea was to sample from various harvest areas.

Q And that would be primarily Fraser River sockeye then?

DR. KLOTINS: I believe that's correct.

Q And just to state the obvious, the plan is showing that there would be 117 taken from each of B and D; is that right?

DR. KLOTINS: That's currently what the plan says, yes.

Q Dr. Wright, Mr. Rosenbloom asked a question of you if the government had a better case for the negative than others do for the positive -- or he asked Dr. Klotins, I think, and you seemed to be trying to get a word in at that point but never did. Did you have anything to say?

DR. WRIGHT: I probably did at the time.

Q All right.

DR. WRIGHT: I'm trying to remember the context of it now.

MR. MARTLAND: And on the notion of getting a word in, I'm mindful, Mr. Commissioner, we were looking to ask some questions in re-examination, but we're now past 4:30. I'm hoping Mr. Taylor is at the end point of his questions.

MR. TAYLOR: All right. Okay. I'm going to -- I'm going to move quick, I think.

Q Mr. Rosenbloom asked Dr. Jones why surveillance wasn't indicated and you mentioned something about getting samples from 2004 forward. Is there anything more to say with regard to sampling for -- checking for ISA or other pathogens from 2004 forward? What, in very brief, because Mr. Martland needs time, if anything, has been done?

DR. JONES: My understanding is that since 2010 under the PARR program that we've been conducting surveillance of health in juvenile salmon in the Strait of Georgia and that meant that we sampled fish in 2010 and 2011 and some of those fish have been tested for the presence of ISA virus.

Q All right. Last question and then a brief comment. Surveillance plan, I'm just going to

note this for the commissioner, Dr. Klotins was asked about it and said there might be something in communications on consultation and I think if you look at page 27 of 79 Sections 5.1 and 5.2, you'll see consultation with a number of stakeholders being proposed, in other words, people outside of government but interested in the matter, both in developing the plan and in the results that would come out of the plan.

Someone, I think it was Ms. Pence, was putting or trying to put in Tab 26 of her material or our binder, I can't remember which. It's become ID UUU. I have in the course of the last hour been given information about that. I can speak with Mr. Martland and Ms. Pence and see where we go. That's probably best, rather than me taking time right now, unless you want me to.

MR. MARTLAND: I'd prefer not obviously. My suggestion, Mr. Commissioner, with respect to these various lettered exhibits for identification, commission counsel plan to set out a process to participants tomorrow in a letter so that we can collectively address that question over exhibits for ID.

MR. TAYLOR: Yes. I don't think my answer will help you with moving it from ID to an exhibit, but I can give what information I have. That's fine.

MR. MARTLAND: Thank you.

MR. TAYLOR: Thank you, Mr. Commissioner.

MR. MARTLAND: Mr. Commissioner, I'm at your direction. I had some questions I was looking to cover. I appreciate we're also set to run till 4:30 and now we're five minutes over. I can confine it to a few quick points, if that's agreeable.

By way of quickly one additional point of process exhibit for identification RRR was an email that appended or included a Hansard excerpt. I gather that's now been redacted out of the email exchange and we'd be in a position to mark that as an exhibit proper if that's agreeable. So seeing no one rise, if I could ask for an exhibit number, please?

MS. PANCHUK: 2144.

EXHIBIT 2144: Email from Kim Klotins to Fred Kibenge dated October 20, 2011 formerly marked RRR for identification

MR. MARTLAND: I'll try and keep this at -- as quickly as I can.

RE-EXAMINATION BY MR. MARTLAND:

Q Mr. Stephen, let me pick up on some of the evidence a moment ago we were just hearing about had to do with testing that had gone on. Let me ask you this question. Mr. Lunn, if you could please bring up Tab 113 of commission's list of documents. Earlier in your testimony, Mr. Stephen, I think you made some reference to other testing for ISAV in Pacific salmon, including ISAV -- I'm sorry, including the PBS and involving Dr. Kyle Garver. This document, I think, describes really the import of Dr. Garver's testing on the Strait of Georgia in 2010 and 2011 to the effect that using Nellie Gagné's protocol as we understand it, all the results were negative. Does that accord with your understanding of the testing work?

MR. STEPHEN: Yes, it does.

MR. MARTLAND: If this might become the next exhibit, please.

MS. PANCHUK: 2145.

EXHIBIT 2145: Document outlining Kyle Garver's testing in Strait of Georgia 2010 and 2011

MR. MARTLAND:

Q I have a question that I'd like to try to do in a compressed way with any panel members, but in particular Dr. Wright and Mr. Stephen. The question has to do with what I would suggest may be some distinction or gap between how the Rivers Inlet fish that were sampled for ISAV, how those test results are being characterized.

Let me look to start that first with Tab 15, which is Exhibit 2039, if that could come up, please, Mr. Lunn. And if we can zero in on the first exchange, if you see Anne Veniot November 18, 2011 writing to Stewart Johnson, cc Peter Wright and Nellie Gagné. It talks about:

Every sample has signs of degradation. If we compare them all, kidney extracts showed less

degradation than the others. Unfortunately, although less, it was still much more than what allows conclusive testing.

If we now jump ahead to Exhibit 2032, Tab 126, this is a transcript of a news briefing or press briefing, Dr. Wright and Mr. Stephen, that you were both part of that occurred on December the 2nd, I believe, page 5 on the PDF of this document, we see reference -- I don't think I need to take you to this passage, but there's reference to some degradation but the tests are negative.

And again at page 9 there's a repetition of that characterized as these being really suggesting, I'll put to you, suggesting that they're conclusive negative. How do you reconcile inconclusive and what would seem to be a pretty firm answer that this is a negative? Dr. Wright and then Mr. Stephen, please.

DR. WRIGHT: Okay. Subsequent to that email, there was discussions with Anne Veniot, who is the head of section at GFC and she agreed that she had answered too quickly and, in fact, based on the testing that was done, although there was degradation, it wasn't nearly as severe as the original samples that we received. So, in essence, what we're saying is the results for those kidney extracts for the 48 of the original are negative, negative analytically and we would interpret them as negative diagnostically.

Q Mr. Lunn, one last test for you, sir. Tab 142, Exhibit 2038, is a document I hadn't given you notice about, but it's a document I'd like to refer to. It's a summary really of the different testing that had occurred and what I'd be asking for is effectively a document that describes what we understood Nellie Gagné's evidence to be.

If we have a look in the fourth column over at the bottom in the greyed-in area at the bottom, interpretation of DFO testing in relation to the kidney column, we see inconclusive. That's what we took Nellie Gagné to say as well. Do you have a comment or response?

DR. WRIGHT: There are several versions of this one and it was corrected for any discrepancies, but still what I'm saying is the -- for those kidney extracts that we received from PBS, although there

was some degradation, running the reference gene, there was still genomic material in there and the interpretation, as I have said before, for -- to only those samples, would be that analytically negative and diagnostically negative as an interpretation.

Q Has it been recently changed?

DR. WRIGHT: Not recently, no.

Q Mr. Stephen, the last question I'll put to you is simply the broad one. Does this amount to rounding up to framing the results in a particular way?

MR. STEPHEN: Well, obviously I'm not in the laboratory and I rely on them to do the -- provide the information. I know that the original table was created in part by one of my staff and he sent it to the region to get input. I do not believe it's rounding up, but I'm just not sure if this is the last version of the table or not.

MR. MARTLAND: Mr. Commissioner, I think I'm the victim of my own time allocations process. Those complete the questions I have and the evidence of this panel. Thank you.

THE COMMISSIONER: Thank you very much, Mr. Martland. To Dr. Wright, Mr. Stephen, Dr. Klotins and Dr. Jones, thank you very much for participating both yesterday and today on this panel. I'm grateful for your attendance. I should say yesterday was Sunday, I don't know what you were doing yesterday, but Friday and today. Thank you very much again for travelling to British Columbia to participate in this panel and to Dr. Jones for being here, as well. Thank you.

(PANEL NO. 67 EXCUSED)

THE COMMISSIONER: We're then adjourned. Thank you.

MR. MARTLAND: Yes. The hearings are complete, I hope.

THE COMMISSIONER: Correct.

MS. PANCHUK: The hearing will now adjourn generally. Please remain standing in place while the commissioner exists the room. Thank you.

(PROCEEDINGS ADJOURNED)

I HEREBY CERTIFY the foregoing to be a true and accurate transcript of the evidence recorded on a sound recording apparatus, transcribed to the best of my skill and ability, and in accordance with applicable standards.

Karen Hefferland

I HEREBY CERTIFY the foregoing to be a true and accurate transcript of the evidence recorded on a sound recording apparatus, transcribed to the best of my skill and ability, and in accordance with applicable standards.

Pat Neumann

I HEREBY CERTIFY the foregoing to be a true and accurate transcript of the evidence recorded on a sound recording apparatus, transcribed to the best of my skill and ability, and in accordance with applicable standards.

Susan Osborne