COMMISSION OF INQUIRY

INTO FORENSIC DNA TESTING IN QUEENSLAND

Brisbane Magistrates Court
Level 1/363 George Street, Brisbane

On Monday, 17 October 2022 at 9.48am

Before: The Hon Walter Sofronoff KC, Commissioner

Counsel Assisting: Mr Michael Hodge KC
Ms Laura Reece
Mr Joshua Jones
Ms Susan Hedge

THE COMMISSIONER: Yes, Ms Hedge?

MS HEDGE: Thank you, Commissioner. Commissioner, I intend to outline now the issue that has been described as sperm microscopy. Could I start with an understanding of the workflow that existed in the laboratory for sperm samples. From about 2010, suspected sperm samples were processed by the laboratory using what was called the suspension method. The sperm swab or material was scraped or cut up into a tube with distilled water. A microscope slide was prepared where some drops of that solution were dropped on to the slide. The scientist then looked at the slide under the microscope to identify whether and what density of sperm was in the sample.

Presumptive tests were also performed on part of that solution. If the presumptive tests were positive or the microscope slide had sperm seen on it, then part of the solution would be processed through quantitation, amplification and capillary electrophoresis.

Sometimes, before that process, the solution would undergo differential lysis, a process to separate the sperm cells from other cells, such as skin or tissue cells. Often, suspected sperm samples were taken in relation to sexual assaults, and so the swabs may contain a large amount of the complainant's cells and DNA compared to a small amount of sperm.

Differential lysis allows the sperm and the DNA it contains to be detected more readily by separating it from other sorts of DNA. If differential lysis is performed, another slide is created after that process, known as a differential lysis slide, which should make it easier to see the sperm once the other cells are removed. However, in some circumstances, if the presumptive tests were negative and the first slide created - often called the ER slide or the evidence recovery slide - did not show any sperm, then the sample would not be processed further at all.

Toward the end of 2015, a reporting scientist noticed in a particular case that there was a discrepancy. She had obtained a strong male DNA profile from a sample, but the slide that was created had not shown any sperm.

Could I have on the screen [FSS.0001.0067.6316]. Can

we scroll down. Is there a second page of that document? Thank you. Just looking at that email there that we see spans the first and the second pages, this is an email sent from Jacqueline Wilson, who is one of the reporting scientists at the laboratory, on 4 March 2016, and you will see that she is writing to her supervisor or line manager, Amanda Reeves, and to Amanda's line manager, Justin Howes, all part of the reporting team. Ms Wilson says:

> *Here's another example of where the initial slide assessment has differed greatly from the DLYS slide --*

that is the diff lysis slide --

> *initial screening was 0 sperm seen however upon examination of the [diff lysis] slide it was 3+.*

Now, these numbers are not exact quantitations, that is, it is not zero sperm and then 3+ sperm. That's a semiquantitative scale. So zero means none; 3+ is very easy to find, but it would be more than literally the number --

THE COMMISSIONER: So it's a rule of thumb method of signifying the amount of sperm from zero to 1+, to 2+, to 3+, but they don't signify one sperm head, two sperm heads or three sperm heads. They signify general quantities from --

MS HEDGE: That's right, how easy they are to find when you look through the microscope at the slide.

Ms Wilson says here is another example. Ms Wilson cannot now remember what that previous example was or when.

Mr Matthew Hunt, another reporting scientist in the reporting team at the laboratory, remembers this issue being raised in late 2015.

Ms Wilson posits a potential issue in the third paragraph there:

> *I personally think we have an issue with the preparation of the slide itself, not in the reading of the slides; Janine phoned me*

to tell me about the 3+ and indicated that she had gone back to the original slide and still could not find sperm so, in my opinion, there's something wrong there.

She suggests "a bit of an investigation on some mock-up samples" to look at the slide preparation issue.

Could we then turn back to the top of the first page. Commissioner, Ms Reeves handed or passed on this email, forwarded it to Mr Howes, and said that - could we just also redact that number in the subject line, please, operator. Sorry. Thank you. She said that in her view also, a further investigation was warranted:

... perhaps looking at how the smear was prepared etc --

"smear" is another word for "slide" --

with the view to widening the investigation if a more systemic issue is observed.

So this was the start of the raising of this concern within the laboratory.

Can we turn, then, to [FSS.0001.0067.6318]. Can I say, Commissioner, I will tender a number of documents using an index at the end of the opening rather than as we go through, if that's suitable.

THE COMMISSIONER: Yes. Do you want to then in due course tender them as a bundle of some kind?

MS HEDGE: Yes.

THE COMMISSIONER: All right.

MS HEDGE: We can see at the bottom of the page, this is the same email that we looked at on the last page, and then at the top of the page is Mr Howes' response, again on the same day, 4 March 2016. He thanks Ms Wilson for raising the concern, and he said:

Good work and we will follow things up here.

In fact, from there, there was a delay of approximately two months before further particular action was taken, I say that because no doubt there were some discussions, but there was a delay while Mr McNevin was on leave, and when he returned he was tasked with --

THE COMMISSIONER: Just so I understand it, what we're dealing with here is that in the first instance, a sample that has been received where what is being looked for, if it's there, is DNA in the form of sperm heads, that sample is treated so that if there are any sperm heads, some of them will be transferred to a microscope slide, so the sample can be viewed through a microscope in the first instance to see if there are sperm there and so the sample would be worth processing further. But if you don't see any sperm heads, then it's not worth processing further and that's the end of it, in general?

MS HEDGE: It's not as black and white as that in the workflows that existed pre-2016, and I say that because there was the presumptive testing. So if there was no sperm seen but positive presumptive tests, it was often moved on to processing. And there was also some ability at least for a scientist to exercise a discretion, if no sperm was seen and there were negative presumptive tests, still to proceed. So the first slide wasn't the end of it, and if it had been, then Ms Wilson would never have found that example --

THE COMMISSIONER: Yes.

MS HEDGE: -- because that had obviously gone on through the process despite being zero on the evidence recovery slide. But in many cases, if there was no sperm seen on the slide, presumptive tests negative, in many, or I say even in most cases, that would have been the end of the testing.

THE COMMISSIONER: So, in summary, the examination of a microscope slide is part of the procedure to determine if it's worth proceeding with or not, but there is the presumptive test, which would indicate the possible presence of sperm, and, if so, in general, that sample would go ahead whether the microscope slide showed anything or not. Secondly, if something showed up on the microscope slide, it would go forward. And, thirdly, there were other cases in which, notwithstanding nothing on the slide, the

sample might go forward, but there would be a class of samples which, if they showed nothing on the slide, they would not progress further?

MS HEDGE: That's right.

THE COMMISSIONER: What Ms Wilson was identifying was that one of these - when progressed further, one of these that might have been risked not going further did in fact go further, for some reason to do with the work process, and it showed at a subsequent step that there was sperm, and then when they went back to the slide, indeed there were no sperm, so there was a problem of some kind in the preparation of the slide or the extraction or something leading up to that slide being examined. So there was a potential for a range of samples to be missed?

MS HEDGE: That's right. It was the view of Ms Wilson and Ms Reeves that there must be some problem at that point in the process.

Others have a different view. For example, Mr McNevin expresses the view in his statement that because the evidence recovery slide has many cells on it, including sperm cells, assuming sperm is present, whereas the diff lysis slide would only have the sperm cells, then it would be expected that there would be cases in which they wouldn't be seen on one but seen on the other.

But the exact cause of it, as we will come to, has never been identified by the laboratory - the exact cause of that discrepancy. The key feature, as you said, Mr Commissioner, is that some things could be missed and that the missing of a sample like that - that is, missing of sperm and meaning that there is no further testing of a sample - might have a very significant impact on a particular case. It may not, as well, in the sense that, as you know, a sexual assault investigation kit has a number of swabs; perhaps this problem or concern might arise in relation to one swab, but sperm would be seen on some other swab, and so the evidential matrix that goes to a court would be similar. But, on the other hand, if that concern or problem arose in relation to a particular swab that had a particular probative impact at the trial, then not testing and not finding that sperm could be very significant in a particular criminal case.

THE COMMISSIONER: Yes.

MS HEDGE: And so the consequences of even one swab not being fully tested could be very significant for one case, which is reflected in - as time goes on, some people within the laboratory are very concerned about this issue, very concerned that it be quickly and promptly dealt with.

THE COMMISSIONER: Yes. All right.

MS HEDGE: March is the first time that there is a written record, but, as I say, Ms Wilson identifies that it's not the first time that she has seen it. One of the particular issues that the Commission will be considering in the evidence today is the length of time over which this issue was investigated and the reasons for that and, in particular, this first period between when the issue was first identified to managers and when real steps were taken to investigate it.

Because that's one of the issues that will confront you, a little of the history needs to be set out in this opening.

Can we turn, then, to [FSS.0001.0066.8701]. We come now to 6 May, so it's about two months after that last email. Mr Howes wrote to Ms Wilson and Ms Reeves following up on this issue. He says he had a meeting planned with Kirsten. That would be Dr Kirsten Scott, the quality manager within the laboratory. Then he indicates there that:

Al appreciates the issue raised and we will look into how to handle the matter. He had some lengthy absence since I passed it on to ERQ --

the evidence recovery team --

previously and should be in a better position now to investigate further. I will keep you informed of the outcomes ...

THE COMMISSIONER: But the team, is that what you're saying, did nothing between 4 March and 6 May?

MS HEDGE: At least no concrete steps towards an investigation. There may have been discussions or something of that nature, and that appears to be the case. Mr Howes --

THE COMMISSIONER: What I mean is they did nothing to prevent samples containing sperm but that showed no sperm on microscopy being missed?

MS HEDGE: That's right, no change to the workflow and no particular investigation into how the particular cases --

THE COMMISSIONER: But more importantly, no steps to ensure that samples weren't missed?

MS HEDGE: Yes, that's right. That's right. Later, as we will come to, there was a change in the workflow to do that, and that was not done until August. So that's right, between March and May, there was no step taken to test all samples or take any other step to make sure that --

THE COMMISSIONER: And, what, nothing until August?

MS HEDGE: That's right. 8 August 2016 was the first change to the workflow.

This issue was then discussed after this email on 12 May and 27 May. At the second of those meetings, the outcome from the meeting was that Allan McNevin would initiate a project plan for the next step. So we can see, effectively, another month has passed to the end of May.

Could we turn, then, to [FSS.0001.0013.2386]. This is the initial request for what became Project #181. You can see that it was proposed by Mr McNevin on 2 June 2016. The title was "Investigation into sensitivity of spermatozoa microscopy".

Could we zoom in, please, Mr Operator, on the text in the middle box. The first paragraph identifies the concerns that have been raised, and two particular concerns are raised about the sensitivity of the original slide microscopy - the suspension method resulting in overly diluted material, or a potential problem associated with the slide staining procedure.

The project was said, at the bottom of this part:

> *... to investigate [part] (i) ... as there is no current in-house experimental data comparing the sensitivity of sperm microscopy, AP and p30 detection and DNA profiling.*

AP and p30 detection are the two presumptive tests that were in place, and there is an indication of how they will be carried out, or how the project will be carried out according to this proposal. That proposal was signed off by Dr Scott.

On 9 June, so about seven days after this document, the matter was discussed at a management meeting. This was the meeting at which Mr McNevin banged his hands on the table. He later apologised for raising his voice and for, in his words, spitting the dummy.

Can we put up an apology email which Mr McNevin sent. It's [FSS.0001.0066.8657]. I'm sorry, that's not the right number. Could we take that document down. I'm sorry, one moment. Sorry, I will come back to that in Mr McNevin's evidence. In the email, Mr McNevin, very shortly after the meeting, apologises for his behaviour in the meeting and describes it as I have said.

The relevance of that meeting to the Commission, in my submission to you, and what occurred there is only insofar as it relates to the continuation of the project, the delays that were experienced and the impression or hesitancy that remained amongst other staff about raising scientific issues because of what occurred at that meeting.

Could we turn then to [FSS.0001.0066.8676]. This is an email on 19 July 2016, so it is about five or six weeks after that meeting. Ms Rika wrote to her reporting team, as we can see there, on 19 July, attaching that document, that Initial Request #181, which was signed. She cc'd Ms Reeves, who was the other reporting team senior scientist at that time, and Mr Howes. She said to her team that:

> *A few people have asked ... about where we are at with the micro slides issue ...*

And she identified that initial request to them.

Investigations are still progressing but in the meantime --

she suggested to her team --

checking your diff lysis slide in any situations where the ER slide and your DNA results don't quite tell the same story.

Now, of course, while that is prudent advice, that doesn't deal with the issue of a case which doesn't progress at all past the ER slide, because there would be no diffs lysis slide or DNA result in a case which didn't progress past that initial slide.

Could we have on the screen [FSS.0001.0067.6328]. You see down the bottom of the page that there is Ms Rika's email that we just looked at, and at the top of the page, Ms Reeves forwarded that up to Mr Howes - forwarded to Mr Howes again to say that she was particularly concerned. She said in her second sentence:

We really need this sorted ASAP, and I can't understand why there is not more urgency around this? It is freaking me out! I dare not say anything else though, this is how I got yelled at the last time ...

In the last lime, importantly, she says:

Given the high risk I am asking if it can be made a priority please?

So it was raised again by Ms Reeves.

Then can we turn to [FSS.0001.0052.8289]. Mr McNevin, on 20 July, so only one day after that, was providing a copy of the project plan proposal, so a more in-depth description than the initial request, and he sent it to Ms Brisotto, who would have been his line manager at that time. He was the senior scientist in charge of evidence recovery.

Can we look at that document. It is [FSS.0001.0013.2174]. This is the project plan prepared by

Mr McNevin. Could we zoom in on the text that's in the box. The concern again is repeated by the staff who raised it. You can see there, Commissioner, the semiquantitative scale that I described: "Zero (nil seen), less than 1+ (less than 10 cells seen on the whole slide, very hard to find)". 1+ means hard to find; 2+ means easy to find; 3+, very easy to find; 4+, abundant.

THE COMMISSIONER: Do the documents we have seen explain why there was no sense of urgency in ensuring that no samples in sexual offence cases were being missed?

MS HEDGE: No.

Then at the bottom of the page, we have the concerns. Again, this is the same concerns that were in the initial request form. Could we turn then to page 2 of that document, please, operator. Again, there is an indication that item (i) will be looked at by in-house experimental data, and there is a description of what will be done. Now, it is clear that the focus on AP and p30 - that is, the presumptive tests - are not directly relevant to whether the slide-making procedure was correct or had some concern with it. There are different tests done.

In the "Benefits", Mr McNevin has stated that because there was no formal validation of the making of cell suspensions that might have started about 2008:

> *... an investigation into the effectiveness of current procedures will fill the gap in departmental records.*
>
> *Additionally, the determination of the sensitivity of microscopy and presumptive testing compared to [the] profiling [of] results is worth investigating ...*

So it is clear from this stage that Project #181 intends to look at a much wider range of things than only the sperm microscopy issue that has been identified, which is the slide-making procedure.

Can we turn then to [FSS.0001.0079.5361]. Could we start at the bottom of the page, please. This is an email from Mr Pippia to Mr Howes, Ms Reeves and Ms Rika. Mr Pippia is a reporting scientist at the laboratory. He

says he thought he would "pass this on". It was a sample tested for presence of semen, micro negative - that's the microscopy - greater than 1+ epithelial cells; PSA positive. I understand that's one of the presumptive tests.

THE COMMISSIONER: So the microscope showed nothing, but there had been a positive presumptive test?

MS HEDGE: Yes. So it went on. Then "SFRAC" is the sperm fraction, and when the sperm fraction was processed for a DNA profile, it returned a strong single-source male profile with peaks around 1200RFU. That's the peaks on the electropherogram. Then on the diff slide, the diff lysis slide, there were 3+ sperm heads, using that semiquantitative scale we have discussed, and less than 1+ epithelial cells. So, again, there is that discrepancy between what was on the microscope slide at evidence recovery and the differential lysis.

At the top of the page - could we just redact that sample number in the top email, please, operator. Thank you. Mr Howes thanked Adrian and asked for a sample number, which he provided.

Could we then turn to [WIT.0002.0106.0001]. Could we start with the bottom email, please, operator. This is an email the day after Mr Pippia's email. Ms Rika wrote to Ms Howes and Ms Reeves. She said she had had a conversation with Paula Brisotto about a plan for sorting out the ER micro slides issue. She had been thinking about it. She suggested that the reporting team did its own projects. She suggested some people who might be particularly appropriate to perform that project, ER experienced people, and she identified the type of project - that they would formulate a project or proposal/plan and carry out experiments and testing in the ER lab. As she says there:

Allan/ER could still do what they feel is necessary in terms of sensitivity study etc ... if they wanted to.

Commissioner, you might remember her evidence last week was that whilst she considered the particular tasks or investigations that Mr McNevin was carrying out were interesting, they weren't a direct answer to the issue, and

so that is the motivation, then, for writing this email, to try and have things moving on the particular issue that had been raised rather than the more general question of whether microscope slides were being produced or whether the workflow was optimised.

Could we go down to page 2, please, operator. She said that the project plan would likely deal with some issues below. Now, let's move right down to the bottom of the page, that bottom email. On 12 May there had been an email from Mr Howes, so we're just going back a little in time here, from Mr Howes to Mr McNevin and Ms Scott suggesting some investigations that could be done with some suggestions from reporting staff. Could we just look through those. They are in the italicised font there. Firstly, "identifying a staining or fixing issue", and there are suggestions of what should be looked into in terms of how the slide was created. And if we turn on to the next page - is that the last page?

THE OPERATOR: Yes, there are just the two pages.

MS HEDGE: All right, thank you. There are some other suggestions, which I will have to come back to. Can we go to the top of page 2 now. This is the end of Ms Rika's email. She said obviously at this stage she hasn't spoken to anyone else and it would be for Ms Reeves and Mr Howes to agree, as the people she nominated were outside of her team.

Can we go back to the top of the first page, please. Ms Reeves then writes to Ms Rika and Mr Howes again emphasising what she considers to be the urgency of it. She says over six months have passed, she has been ignored, and:

> *... there is still no outcome and we are still exposed in terms of risk, as Adrian's most recent example has illustrated.*

She says she is going to step away and let Justin decide if her staff are required or not. So that's 28 July, keeping in mind that the issue was raised, it appears from Mr Hunt's evidence, some time at the end of 2015.

We come now to that point that was mentioned earlier, Commissioner, about a workaround. Can we turn to

[FSS.0001.0051.5190].

THE COMMISSIONER: So five months have passed, and not a step has actually been taken even to obviate the risk, let alone find out why this has been happening, so nothing has changed?

MS HEDGE: That's right, at this stage. So we come to 8 August 2016. Could we zoom in on the top half, perhaps, of that page. Thank you. This is an email from Mr McNevin to his team - that is, the evidence recovery team. He says in his first sentence:

> *Due to concerns and identified potential risks associated with the possibility of missing semen with current ER processes, we are making a minor change to processes effective immediately.*

At this stage, it's clear that this is in response to the risk that we've discussed:

> *Please note that this change in process is being done to mitigate against the above risk, as well as buy us time to further investigate the current process and develop/test potential process improvements. Please also note that this has arisen, not because of concerns around your ability to follow correct procedure or identify spermatozoa or any similar problem, but rather that the process that was put in place at a time when verifications/validations were new to the department and that we were not fully cognizant of the limitations or risks associated with the said process.*

THE COMMISSIONER: What does that mean?

MS HEDGE: As I understand it, the process for doing validations and verifications has become more and more rigorous over time, particularly within forensic DNA, so the validations being done now are a much more rigorous thing than would have been done in 2008. In fact, Mr McNevin says he cannot find a validation of the process when introduced in 2008.

THE COMMISSIONER: He cannot find what?

MS HEDGE: A validation done at the time of introducing that new process, the suspension method.

THE COMMISSIONER: I see.

MS HEDGE: The Commission has not investigated whether that was out of the ordinary for 2008, but he has identified that in 2016 as something that was different than what he would have done if he was introducing the process in 2016.

THE COMMISSIONER: Is the evidence going to show that the lab has worked out for how long there was a process in place under which samples might have been missed?

MS HEDGE: That is known because it's the time between when the process was introduced in about 2008 and when the workaround was introduced in almost 2016. So that time period is known. But what samples there were that were not processed because of a lack of sperm on the ER slide has not been --

THE COMMISSIONER: They never went back to find out what has been missed, so whatever has been missed has now been missed and they have never looked to find out whether they missed any and how many?

MS HEDGE: That's right.

THE COMMISSIONER: Is that right?

MS HEDGE: That is right. But what they did do was do a piece of data analysis between August 2016 and about March 2017, and I can confirm that time period when I come to the document - they did a piece of data analysis of samples in that period, so after the workaround, where they said, "Let's look at the ones that would have been missed under the previous", they had about 730 samples in that data analysis, and they looked at how many of them would have changed the case.

THE COMMISSIONER: I see. Well, you will come to that.

MS HEDGE: That was a relatively small number, would have

changed the case, and so that is likely to have fed into the decision not to go back.

Just to round out that - I will deal with it in greater detail, but just to round out that topic of going back and finding examples, Mr Clint Cochrane, who is an expert witness who has been engaged by the Commission to consider this issue, identifies that that is something that could be done now, and he sets out a number of criteria under which the laboratory might decide which of those samples which were missed in the past should now be retested, because of course some of them might relate to cases that have been resolved either by a plea of guilty or conviction, and some of them - or acquittal, I should say, resolved in any way - and some of them may also be only one swab of a group of swabs, others of which came up positive for spermatozoa.

So he says that it would be possible for the laboratory now to go back and look for things that were missed and identify particular cases. Whether that should be done or not is a policy consideration that balances a number of features, but he says that at least it could be identified how many of them there are by applying certain criteria, and then that policy decision balancing resources could be undertaken, whereas at this stage, as far as the Commission knows, it's not known what was missed to know how to balance that decision.

THE COMMISSIONER: Remind me, what they did was for the period from when the workaround started in August 2016 until the date they performed this analysis - was how long?

MS HEDGE: When they did the data analysis?

THE COMMISSIONER: Yes.

MS HEDGE: Approximately nine to 12 months. I will just confirm that. The data analysis covered the period 8 August 2016 to 28 March 2017, but you were looking for when - and that was reported in a draft paper in May 2017.

THE COMMISSIONER: That's about eight months' study that they did?

MS HEDGE: That's right.

THE COMMISSIONER: And they had about 700 samples for eight months?

MS HEDGE: That's right. Perhaps I can tell you the details of that now rather than coming back to it later, so could I have on the screen [EXP.0004.0001.0009]. This is the expert report of Mr Cochrane. Could we zoom in on paragraphs 47 and 48 at the bottom of the page there. So this is the review: 738 samples tested between those dates where sperm was not identified on the ER slide and a differential extraction slide was made. Of the 738, 591 did not have sperm on the differential slide, either, and 147 subsequently identified sperm on the differential slide.

Then they looked at those 147, and as you see there at 48(a), 71 would have been tested by differential extraction, anyway, because of presumptive testing results, sample type or other results.

If we can turn then to the next page and zoom in, 47 samples would have progressed through DNA testing using the routine cells protocol. It is less effective.

THE COMMISSIONER: Just pausing there, of those 700, 29 would not have progressed; all the rest would have been rightly eliminated or would have progressed. Is that how I read it?

MS HEDGE: In some way, that's right. Those 47 there wouldn't have progressed through differential lysis but would have progressed through a cell - a different protocol but would have progressed in some way, that's right. 29 would not have been tested for DNA based on the previous workflow, and then of those 29, you see there that 28 would not have recovered new evidential DNA profiles because of other SAIK results in the case.

Now, could I just indicate - well, we will deal with all of it. And one would have recovered DNA evidence that would not have been tested, so that one of the 738 would have found sperm which was not found anywhere else in the SAIK, is the point. That suggests limited --

THE COMMISSIONER: Well, just leaving aside what happened here, about 28 samples would not have been tested, so we wouldn't know what they contained; is that right?

MS HEDGE: That's right.

THE COMMISSIONER: So that's about 30 samples in the period, which is six months. So about 60 samples per year would not have been tested, over eight years, so that's about 500 samples that went through to the keeper over that period - between 400 and 500 samples?

MS HEDGE: I'm not entirely sure of that mathematics.

THE COMMISSIONER: Well, it's 30 samples, it's in six months, so it's six --

MS HEDGE: I think it's - oh, yes, I suppose it is. I think it's about seven or eight months. Start of August to the end of March of the next year, is that eight months?

THE COMMISSIONER: August, September, October, November, December, January, February, and it's the beginning of March, so it's six months.

MS HEDGE: I don't mean to be argumentative, it's 28 March.

THE COMMISSIONER: Oh, did you say 28 March? All right, so it is seven months.

MS HEDGE: So August, September, October, November, December, January, February, March. I have eight.

THE COMMISSIONER: All right, eight.

MS HEDGE: So if it's eight, 30 in eight months, and eight months is two-thirds of 12 months, so --

THE COMMISSIONER: Well, it's eight years.

MS HEDGE: That's right, so perhaps 40 to 50, say --

THE COMMISSIONER: So it's about 12 periods of eight months, is that right, so about 400 have been missed?

MS HEDGE: Yes.

THE COMMISSIONER: Yes, go on.

MS HEDGE: And we see in (c), and moving on to paragraph 49, that Mr Cochrane - and this is the way that the Queensland laboratory saw it, too, that those 28 that would not have recovered new evidential DNA profiles, they sort of put them to one side as not being a significant effect.

THE COMMISSIONER: That's because there were other results in those cases.

MS HEDGE: That's right. But all I wish to add is that of course in the criminal justice system, sometimes one result is the one that matters, that is, if the victim or the complainant says that sperm was deposited in a particular place, perhaps on a hand or on a back, then it is that one that matters for credit, so having other sperm somewhere else in the SAIK may not be a full answer to the case.

THE COMMISSIONER: That's right.

MS HEDGE: So I just wish to add that caveat as well, that it may not occur to scientists, but it is something that, as a criminal lawyer, Commissioner, you would be aware of. Sometimes it's the one that matters.

THE COMMISSIONER: Anyway, what we know is about that many samples would not have been tested, and the implications of that are unknown.

MS HEDGE: That's right.

That mathematical exercise we have done proceeds on the basis that the workflow was pretty consistent through that period from 2008 to 2016. Now, there is no evidence that it changed, but of course there can be minor changes from staff doing things in slightly different ways, and it also assumes that in all of those periods there is the same number of SAIKs coming in as in that period in 2016/2017. So there is a few assumptions under there, but it is clear that there is a large number of samples, it's not just four or five, over that period that could be now looked at.

All right, so that's the data analysis. Could we go back to that email on 8 August 2016 that started that workaround, [FSS.0001.0051.5190]. We had looked at the top of the email. Then could we look at the part under the heading "The change". So it is indicated that:

The change is around the examination for semen/spermatozoa ...

... Samples that are micro negative for sperm and AP negative are to be submitted for Differential Lysis ...

... Samples that are micro negative for sperm and AP positive, P30 negative are to be submitted for Differential Lysis ...

So the effect of that is that everything goes to differential lysis. The additional process change is that the diff lysis slide will be read. Then there is some discussion about what exhibit lines might be used.

So that's the workaround and described by Ms Rika as a safety net to catch the cases that might come through.

To this point, at least seven months had passed since the issue was first identified, more likely eight months or longer. This change to the process resolved the issue moving forward because all samples would be subject to differential lysis and both slides reviewed, no matter the result of the initial slide assessment and the presumptive tests.

However, there were some aspects that remained outstanding at this point. One is, why did the issue arise in the first place, and the second is what to do about samples that had been analysed before the process changed, and we've just dealt with the data analysis.

THE COMMISSIONER: So what happened in August was that this idea was raised that, "We're missing things on the microscope, so let's send everything through to the differential lysis process"; is that right?

MS HEDGE: That's right.

THE COMMISSIONER: "All of these relevant samples - let's send it straight through to the differential lysis process, because that's the process which we know is picking up sperm when there is sperm"?

MS HEDGE: At least to the greatest degree, that's right.

Nothing's perfect, but --

THE COMMISSIONER: Yes, yes. So is there any evidence that we have seen as to why this idea didn't occur to anybody when Ms Reeves first raised the problem at the end of 2015?

MS HEDGE: No.

THE COMMISSIONER: All right. Because it sounds like a plain and logical idea, not requiring a project to work through, and in the end it was just a plain and logical idea that Mr McNevin put forward --

MS HEDGE: That's right.

THE COMMISSIONER: -- but nobody thought of it eight months before?

MS HEDGE: Well, no-one implemented it, and there's no evidence of discussion about it or proposal of it, yes.

THE COMMISSIONER: Or even of the need to think of something like that?

MS HEDGE: That's right. And this didn't come out of the project per se. The project was still just at --

THE COMMISSIONER: No, I understand that. That's what I mean, that you can have your project, but this was an idea that had nothing to do with experiments and statistical analysis. This was just a notion that, well, if method A doesn't work and we have found that method B is working in picking up these things, let 's just go straight through to method B. It just baffles me why that proposition didn't occur to anybody at around the time that the issue was first raised by Ms Wilson and Ms Reeves.

MS HEDGE: Yes.

THE COMMISSIONER: But we don't know why?

MS HEDGE: And they did continue to do the evidence recovery slide, but they just always - they just did both slides for every case rather than --

THE COMMISSIONER: After August?

MS HEDGE: That's right.

THE COMMISSIONER: But before that, for eight months, they continued with the process that was leading to error?

MS HEDGE: They just continued, that's right.

THE COMMISSIONER: It doesn't sound very scientific.

MS HEDGE: It's something we can take up with Mr McNevin and Mr Howes. They were the ones in charge of that decision.

THE COMMISSIONER: Yes.

MS HEDGE: And Ms Brisotto.

On 16 August, the project proposal was circulated, and there was feedback from management committee members.

In October 2016, there were steps taken by the executive director, Paul Csoban, to engage Livingstones Australia to investigate concerns about the laboratory. Some of those concerns or investigation topics related to Ms Reeves and Mr McNevin and their personal interaction, which is of less concern to the Commission than the more general investigation into the poor working relationship between the substantive team members of the management team.

So while the project continues, there is also this culture/human resources type investigation occurring, which you have heard evidence of from some of the scientists. For example, you might remember Ms Keller, Angelina Keller, indicated that when she had her interview with Livingstones, they just asked her about Mr McNevin and Ms Reeves, who she preferred working with and their working styles, and so on. So this becomes part of the story of this project, that there is a coincident - well, not coincident - there is another investigation about culture occurring at the same time.

Mr McNevin says in his statement that the culture of the laboratory generally did decrease or become worse in this period 2016/2017. In his view, that had an impact on the speed with which this project continued.

In November 2016, Ms Reeves went on leave from the laboratory, and around this time there were some workplace-related meetings about Ms Reeves and about her role in the laboratory which are not relevant to the Commission and we don't intend to go into in depth or at all.

Can we turn, then, to a different aspect of this. Part of the interaction with Ms Reeves was that Ms Reeves maintained concerns about the process and looking backwards at previous samples past the workaround. So while some were satisfied with the workaround - Ms Rika was satisfied that it was a safety net at least, even if she wasn't satisfied that it was a root cause analysis - Ms Reeves remained concerned and expressed those concerns.

In January 2017 Ms Cathie Allen and Mr Paul Csoban started to prepare a brief to go to ESR, which is the laboratory that does, among other things, forensic DNA analysis in New Zealand.

Could we have on the screen [FSS.0001.0079.3192]. Does that document have another page? No. That's the email where Mr Csoban and Ms Allen discuss the brief. Could we then turn to [FSS.0001.0066.9377]. Sorry, that's not the right document. Can we take that down. That might resolve the redaction issue.

Could we have instead, please, operator, [FSS.0001.0024.1535 at 1536]. This is the terms of reference or instructions given to ESR. Could we zoom in on the "Background" first, please. The issue that is identified in the first sentence is accurately identified, that is:

> *... raised specifically regarding spermatozoa negative, acid phosphatase --*

which is the presumptive test --

> *negative sexual assault samples, however a review of the processing of SAIKs would be appreciated in the spirit of continuing quality improvement.*

Then under the "Terms of Reference", you see:

The objective ... is to examine the processing of sexual assault investigation kits ... to ascertain its validity as an acceptable, scientific process.

There are four dot points of what the ESR review will cover. None of those are email advice of the difference between the ER slide and the diff lysis slide.

If we can go back to the top of the page, under "Background", there is an indirect reference there indicating spermatozoa negative, but there is nothing in this document that indicates that the negative is on the ER slide when sperm were seen on the diff lysis slide, or something of that specificity, to identify what the problem was that was raised by staff.

There is also no reference in here to Project #181 or the workaround put in on 8 August. So essentially --

THE COMMISSIONER: Just pause for a moment so I understand it. ESR, of course, is a recognised world-class facility for DNA testing?

MS HEDGE: Yes.

THE COMMISSIONER: In fact, we've retained somebody from ESR to give expert advice in this Commission, haven't we?

MS HEDGE: Yes.

THE COMMISSIONER: So they are being told that an issue has been raised regarding spermatozoa negative, and the objective of the review, under "Terms of Reference", is to examine the processing of these examples, and what ESR is being given are the standard operating procedures, relevant ones, and something called a "small report titled 'AP Paper'". Do we know what that is?

MS HEDGE: AP is one of the presumptive tests, and it relates to false positives, so that is when a sample would test positive for seminal fluid using acid phosphatase, but it was a false positive, so it's not --

THE COMMISSIONER: So they are given standard documents from the lab, but ESR is not being told that they are

missing cases that ought to produce DNA?

MS HEDGE: That's right.

THE COMMISSIONER: All right.

MS HEDGE: That paper was prepared by Valerie Caldwell and Allan McNevin. It's effectively like a short journal article.

THE COMMISSIONER: You mean the AP paper, you're talking about?

MS HEDGE: Yes.

THE COMMISSIONER: Yes, all right.

MS HEDGE: I can bring it up on the screen --

THE COMMISSIONER: No, no. I just wanted to know what it related to.

MS HEDGE: Yes. I will just put it on the screen briefly just to deal with the start of it. It's [FSS.0001.0066.9267]. Can we zoom in under "Incident", please. On 8 November 2016, a negative control gave a false positive AP result when testing was performed using the large filter paper sheets. Obviously a negative control should have no seminal fluid on it, because it should have nothing on it, and it tested positive for seminal fluid or semen. So that was the issue. The relevance of this is that not only was the ESR not briefed on the specifics of the issue raised by Amanda Reeves, they were briefed on the specifics of this other issue.

THE COMMISSIONER: Which was not a problem at the time - at least it was not the problem at the time?

MS HEDGE: Yes. It is a problem to have a negative control come up like that --

THE COMMISSIONER: Yes.

MS HEDGE: -- but presumptive tests are notoriously imperfect. So it was not the issue that Amanda Reeves was raising, and as we will see, the ESR report was then linked to Amanda Reeves' issues rather than being linked to these

other issues.

THE COMMISSIONER: So she was expressing her frustration - we saw one of her emails in which she said she was freaking out and another in which she said she had tried and tried and tried to have this issue raised. This was at a time when samples were going through the same procedure, with the risk that relevant evidence was being missed. And then after that, there is a controversy between her and management staff about her insistence about this matter, I take it?

MS HEDGE: That's right. The details are not necessary for the Commission, but that issue continued to be raised by Ms Reeves during discussions about her workplace issues.

THE COMMISSIONER: Yes, so in order to put the issue to bed, among other things, ESR is briefed to have a look at sperm microscopy and the sperm identification and testing process, and they're not told about the single greatest issue that affects that process that arose in 2016; instead, they are given the standard documents to have a look at?

MS HEDGE: That's right, and that big issue was the impetus for the project which was then ongoing, and it's not mentioned there, either.

THE COMMISSIONER: Yes, yes. The one big issue concerning that process was something that they are not told about. All right, so that brief goes out to them. Where do we go next?

MS HEDGE: On 3 February 2017, Paul Csoban wrote to Amanda Reeves about her return to work and told her that there was a scientific investigation ongoing. Can we put that on the screen, [FSS.0001.0067.0539], and can we turn to page 3 of the document. This is the "Outstanding issues with the scientific process". It indicates here - this is the letter from Mr Csoban to Ms Reeves - that she had previously raised issues about the integrity of the scientific tests that were undertaken. In the third paragraph, he says:

> *... I have engaged an external report, to undertake a further scientific investigation and provide a report ...*

So there is discussion there about how she might return to work while her concern about the scientific process remained.

Can we turn to page 4, and there should be a heading "Options" on that page, "Available options". Alternative options for duties for Ms Reeves were identified there, including a temporary role in research or a temporary scientist role working within Pathology Queensland. We know from the evidence we have heard that there was a research project that Ms Reeves did when she did return to the workplace.

Could I turn then to 8 February - so we are in February 2017 now - and to a briefing note that Ms Allen drafted for the director-general about this Amanda Reeves issue. [FSS.0001.0024.0924].

THE COMMISSIONER: Before you go there, could you go to the previous page of this document. In the fourth paragraph, if you could highlight that, please - at a meeting in January 2017, apparently Ms Reeves had said it wouldn't be appropriate for her to review sexual assault cases as a reporter or give evidence about them because of her ongoing concerns. Do I understand that to mean that having regard to her doubts about the integrity of the testing system up to August 2016, she was not prepared to give opinion evidence as though the process was working well, or what, do you know?

MS HEDGE: I don't believe it was said in such a blanket way. By that, I mean that it may be that in a particular case, if she was asked, she would have to express her opinion or her doubts about the process. It would all depend on the particular case and the particular testing that was done, because there might be cases from before August 2016 where the differential lysis slide was prepared and read, and so then she would have no concerns about that particular case. But there was a risk.

THE COMMISSIONER: So if she had concerns about the integrity of the testing in cases where semen samples were involved, why would it be inappropriate for her to give evidence in accordance with the truth as she saw it? Why should she be prevented from giving evidence about her doubts about the integrity of the process if she had doubts

about the integrity of the process?

MS HEDGE: Well, I don't say it would have been inappropriate for her to do that, but the Commission hasn't investigated any particular case where that risk arose. As I understand it, this was a discussion about the risk of it as opposed to --

THE COMMISSIONER: Yes. What I mean is that the risk that is spoken of is that somebody whose expert opinion is that, "I can't give you an absolute opinion about this because I have no faith in the way the semen samples were processed", would be giving that evidence.

MS HEDGE: Yes, well --

THE COMMISSIONER: And if it's true, what's the risk that was being spoken of?

MS HEDGE: I understand the risk would be that while that was her belief, that may not have been the true state of affairs, in the sense that at this stage she has been on leave and so her knowledge of the intricacies of the process may be --

THE COMMISSIONER: But everybody knew that samples were being missed and that a workaround had been put in place that would catch those samples henceforth, so what was the inappropriateness of her giving expert evidence because of her concerns in that respect? I'm not asking you to - I'm asking you whether we know what - I don't understand that paragraph.

MS HEDGE: I think the answer is we don't know. We don't know the specific concern, and, can I say, just looking at the wording of that, it does say Ms Reeves "accepted", as opposed to Ms Reeves "said" --

THE COMMISSIONER: Yes, that's right, yes.

MS HEDGE: -- written in that particular language. That may not be accepted by Ms Reeves, and the intent of counsel assisting is to not descend necessarily into the --

THE COMMISSIONER: No, no, the rights and wrongs of human resources issues - that is, staffing issues - are peripheral, although some of them are important, of course.

But the story so far is that something is going wrong with microscopy when looking for semen, and everybody knows that as a consequence some samples might have been missed, and it took eight months - longer, actually - from the time when the issue was first raised in 2015, according to the evidence you have opened, for anything to be done about it. So I think we've agreed that about 400 samples might have been missed - anyway, a not-insignificant number of samples --

MS HEDGE: Yes.

THE COMMISSIONER: -- the forensic significance of which is unknown, and if an expert from FSS goes to court and gives evidence in accordance with those truths, unless there was something else that was concerning Ms Reeves that made her an inappropriate expert witness for FSS to offer, I don't see why telling the truth about that - but, anyway, you don't know the answer yet, so we'll see what happens.

MS HEDGE: Thank you. The risk is described by Ms Allen in this draft briefing note, at least as she perceives it, so [FSS.0001.0024.0924]. Can we turn down to 1.8 and 1.9 at the bottom of the page there. So there is a threat of a public interest disclosure. At 1.9, it says that risk mitigation steps have been introduced and a scientific review of those kits has been commenced, so it indicates what the review is.

Can we turn to the next page, please. In paragraphs 2 to 5, it indicates that while Ms Reeves has obtained a clearance to return to duties, an offer of alternative employment has been made.

THE COMMISSIONER: The last sentence of paragraph 2 suggests she had not agreed it would be inappropriate for her to give evidence. All right. Number 3 is what you are talking about?

MS HEDGE: Yes.

THE COMMISSIONER: Well, I don't understand that at all. Anyway, it will become clear. Don't hold up things for that reason.

MS HEDGE: Yes. And that is the risk, as I say, as drafted by Ms Allen, as I understand it.

THE COMMISSIONER: Paragraph 4:

> *If Ms Reeves were to provide evidence that processing of sexual assault evidence was inadequate ... the community would lose faith in the scientific work ...*

MS HEDGE: That's right, that's the risk that has been identified.

THE COMMISSIONER: And the inadequacy we're speaking of is that period during which samples were probably being missed? There is no other inadequacy that we are talking about, is there?

MS HEDGE: No, that's right, but perhaps at this stage it may be - and I don't know, but it may be that different people in the laboratory had different views about how much might have been missed, if anything, so whether those examples that were coming up in late 2015, early 2016 were an anomaly as opposed to a systemic issue. Mr McNevin says, for example, that he is not necessarily convinced that there was a systemic issue as opposed to a number of anomalies which do exist in forensic DNA analysis.

THE COMMISSIONER: I see, all right. That is to say, Ms Reeves' concerns might have been unreasonably - they might have been overblown? She might have been overly concerned about something that didn't warrant that degree of concern?

MS HEDGE: That's right.

THE COMMISSIONER: Therefore, you can't have those concerns being aired when they weren't justified in the way she saw it; is that what you are saying?

MS HEDGE: That's right, that's right, because the science is not perfect, so missing a couple of samples - a couple, you know, a very small amount - may not indicate a greater problem with the whole process, that's right. So there's a difference of opinion about that. So if Ms Reeves' concern was an unreasonable one, then it would not be a good outcome for that evidence to be given and then call into question what is otherwise an acceptable process. But that's what the evidence will bring out, whether that

risk --

THE COMMISSIONER: Yes, all right. Yes, I understand. We will see how it comes out.

MS HEDGE: How that risk was dealt with and how significant it was.

Mr Cochrane, I should say, holds the view that there were sufficient examples, from what he has seen, that there should have been an OQI raised or an adverse event raised and there should have been some urgent attention paid to this. So, in his view, there was a sufficient risk to do something quickly.

Can we move then to March 2017. Mr Csoban wrote to Crown Law about Amanda Reeves, and this is an attachment to Ms Allen's statement, [WIT.0019.0016.0001 at 0877]. It is the middle email. In that first paragraph there, Mr Csoban says that:

Amanda is currently removed from the reporting section but has been placed into a project role outside of DNA pending outcome of the HR Review and also the Scientific review of the process she is challenging.

THE COMMISSIONER: I see. So the basis for the ESR review was that they were reviewing the scientific process that gave rise to Ms Reeves' concerns?

MS HEDGE: I'm sorry, I just didn't catch that?

THE COMMISSIONER: The basis for the ESR review was that it would be examining whether Ms Reeves was justified in the concerns that she was expressing and that, if called upon to give evidence, she might have occasion to voice in open court?

MS HEDGE: And that's how it is portrayed by Mr Csoban in this email, that the ESR review has some responsive feature to her concerns.

THE COMMISSIONER: Yes.

MS HEDGE: But as we looked at the terms of reference --

THE COMMISSIONER: It didn't.

MS HEDGE: -- it didn't. It looked at the process that she was concerned about, but it didn't tell them, "This is the thing that we have seen" --

THE COMMISSIONER: It looked at the process that was being used that actually gave rise to the problems.

MS HEDGE: That's right. So without the factual circumstance of having seen the sperm on the diff lysis slide but not on the ER slide, there is no indication - it's perhaps not apparent to ESR what the issue is. Mr Cochrane says that about the process before the workaround - the process at the start of 2016. He says that process is fine if it works. And so if it's not working, then there is some problem, and that's what these particular examples show. But ESR weren't told the particular examples or the particular problem.

THE COMMISSIONER: They weren't being told that the process they were being asked to look at wasn't working.

MS HEDGE: That's right, or at least had some examples of that, that's right.

THE COMMISSIONER: Well, it has to work in every case. Variability in measurement and the occasional failure might be inherent in any scientific process, but that's not what Mr Pippia and Ms Wilson were talking about when they were raising these issues in their emails.

MS HEDGE: That's right, because they had started to see a few, that's right.

THE COMMISSIONER: That's not what management thought was happening, because they generated at least a project and a workaround - two things - to deal with it. So this wasn't scientific variability; this was a failure that required action, and action was being taken - slow that it might have been, but action was being taken.

MS HEDGE: Yes. That may not be wholly agreed across the laboratory - for example, Mr McNevin says of course you would start a project and gather data, but the purpose of that is to determine whether there is a problem. So he

wasn't necessarily accepting that there was a problem when he started to look at this.

THE COMMISSIONER: I see, all right.

MS HEDGE: But, yes, we will hear more from these people about that.

Can we turn, then, to [WIT.0019.0016.0001 at 0746]. Could we just turn to the page before that, I'm sorry. This is an email from Ms Allen to lawyers at Clayton Utz, who were briefed to give advice about Ms Reeves, and if we can turn back to the second page, in about the fourth-last paragraph:

I've attached the Australian and New Zealand Forensic Science Study ...

THE COMMISSIONER: Who is Ms Allen writing to?

MS HEDGE: To a lawyer at Clayton Utz --

THE COMMISSIONER: Right, at Clayton Utz, yes, sorry.

MS HEDGE: -- who were briefed to give advice about the Amanda Reeves situation.

THE COMMISSIONER: What's the date of this?

MS HEDGE: 9 March 2017.

THE COMMISSIONER: All right.

MS HEDGE: Ms Allen indicates what she says might be a breach of a code by Ms Reeves, but that's not the present purpose of this paragraph. Rather, it says what ESR said:

... given that ESR have said that we have a sound, scientific procedure, if Amanda were to not accept this, then perhaps she's not being objective ...

Again suggesting that there is a connection between what ESR were asked to do and what Ms Reeves has raised.

Could we turn, then, to when the report is obtained from ESR. At first it's a draft, but it becomes the final

report. That was in late March 2017. So could we look at [FSS.0001.0079.3295]. In short compass, the report found that there was no concern about that process. This is the email attaching the report from ESR and sending it to these people, from Mr Csoban. Importantly, Jade Franklin is an HR person within Queensland Health. That's 23 March.

Can we then turn to [FSS.0001.0079.3297]. So in the context of everything that has gone before, it is clear that at least some people have the impression that this relates to Amanda Reeves' concern. Can we turn to the email right at the bottom of the page there from Jade Franklin. Commissioner, you see in the third sentence Jade writes:

Is it a problem that the report does not comment on the fact that Ms Reeves is wrong in her thinking?

In terms that "false negative" issue Ms Reeves discusses is not an issue at all.

THE COMMISSIONER: What does that mean?

MS HEDGE: It's just not in the report, because they weren't asked to consider that issue. So there's just nothing about it.

Jade Franklin identifies that. Then can we turn to [FSS.0001.0079.3299]. This is a response - sorry, could we scroll down to the next page, please, sorry, back to page 1. Sorry, I don't think that's the right email. In any case, Ms Allen responds and does not identify exactly - does not say anything in response to that point made by Jade Franklin about whether it is a problem that the report doesn't comment on Ms Reeves' issue.

Can we then turn to advice given by Clayton Utz in late March 2017. It is [FSS.0019.0021.0001]. Again, all these documents, while they have lots of material about Ms Reeves, are really directed by counsel assisting to this ESR report issue. Could we turn to page 6 of that document and could we zoom in on the "ESR Scientific Report" part, please. Clayton Utz indicate they "have reviewed the ESR Scientific Report":

Whilst it appears to support HSQ's current

testing process, it is not clear whether it also [considered] the testing process in place prior to August 2016.

In fact, Mr Cochrane's view is that it was the previous process that they considered, because the workaround wasn't advised to them and the standard operating procedure hadn't been amended by the time it was sent to them.

In any case, Clayton Utz said:

In our view, this needs to be clear if it is to be presented to Ms Reeves.

THE COMMISSIONER: So that relates to the first paragraph on that page, namely, that Ms Reeves was insisting on going back to her original job, and the only reason that's put forward as to why she can't go back to her original job is that it was said to be inappropriate for her to be involved in assessing sexual assault case samples because of a risk, and that was based upon a rejection of her concern about how such samples were tested until August 2016, and Clayton Utz are being told that the ESR report has addressed the mode of testing by the lab in absolute terms and has given it a big tick.

MS HEDGE: Yes, that's right.

THE COMMISSIONER: But unknown to Clayton Utz - well, Clayton Utz then pick up in paragraph 7 that the ESR report doesn't actually address what Ms Reeves is concerned about.

MS HEDGE: That's right, not the specific issue.

THE COMMISSIONER: All right, so where do we go then?

MS HEDGE: Then in April 2017, Mr Csoban met with Amanda Reeves and her legal representatives, and it was made clear that a willingness to abide by the outcome of the ESR review was required of Ms Reeves in order for her to be permitted to return to her substantive role, although there is no evidence that she was ever given a full copy of the report or of the terms of reference.

There is a number of other further HR-related matters involving Ms Reeves' position, and in September 2017 there was a letter written about her return to her substantive

position. Could we turn to [FSS.01 - I'm sorry, I don't think we need that document. There was an email about her actual return, and she did return for some short period to her substantive position before eventually leaving the laboratory.

In the meantime, the Project #181 continued, and while I will tender the particular documents that form part of Project #181, Mr Cochrane has summarised them in his report, so it is convenient to look at it that way. [EXP.0004.0001.0001 at 0002]. Could we just zoom in on this table. We can see that there is a number of parts of this project.

Part 1 looked into the current microscopy method sensitivity - that is, how good it was at picking up spermatozoa, including the presumptive tests.

Then in part 2, there was an alternate microscopy preparation method using a spin basket.

Can we then turn over on to the next page. Thank you. Part 3, which was done in May 2018 - and these dates are the dates of commencement - they looked at the viability of varying ER sample suspension volumes to allow for presumptive screening.

Part 4, optimisation of ER suspension incubation conditions.

Part 5, effects of different variables on AP performance - that's one of the presumptive tests.

Part 6, further attempts to optimise the performance by reducing suspension volume.

Part 7, different substrates and semen donor source.

And at the end, there was a new modified protocol implemented about the use of a presumptive test. So you can see, Commissioner, that none of those parts are a root cause analysis of why the ER slides weren't showing sperm in those particular examples or more broadly, as was identified by the scientists.

THE COMMISSIONER: Just to go back to the commencement, which was in August 2016 - is that Project #181 we are

talking about?

MS HEDGE: Yes.

THE COMMISSIONER: Yes, on page [EXP.0004.0001.0001 at 0002], yes. So the project begins in August. If we look at the entry for April 2017, they are trying an alternate preparation method for microscopy; correct?

MS HEDGE: Yes.

THE COMMISSIONER: In May 2018, they are exploring the viability of varying suspension volumes. In short, upon the launch of the project, they are trying different methods on the basis that the methods outlined in the standard operating procedure were giving rise to problems?

MS HEDGE: Yes, although I'm not sure that was accepted by Mr McNevin, but he was trying to optimise the procedure, in any case. Whether there was a problem or not, his aim was to optimise the procedure.

THE COMMISSIONER: Yes, but the trouble is that ESR were being given the standard operating procedures in print without being told anything about this?

MS HEDGE: That's right. That perhaps is only a problem depending on how you use the ESR report. If you use it for what it is, then there is --

THE COMMISSIONER: Well, that raises the question, what is the purpose of getting a report from ESR looking at the printed standard operating procedures and asking for an opinion about them, when in the background you have scientists complaining about the viability of the system and a scientist engaging in a project trying to improve the system for some reason or other. Anyway, we will find all that out in due course. Where do we go next, then, Ms Hedge?

MS HEDGE: Can I deal briefly - that's effectively the end of the history of the matter, and you will have seen that the end of the project is in 2020. So in total, the project went for about four years. That is another issue that the Commission engaged Mr Clint Cochrane to consider, and he considered that that also was a long period of time and that the matter should have been able to be done more

quickly.

Can I briefly open Mr Cochrane's evidence. He will give evidence after the opening, perhaps after the morning break. He concluded that the workflow before the issue was identified --

THE COMMISSIONER: Do you want to have the break now, before getting on to Mr Cochrane's report?

MS HEDGE: I will only be a few minutes. I'm just opening it --

THE COMMISSIONER: Right, yes, go ahead.

MS HEDGE: He concluded that the workflow, as I said, was best practice as long as each of the processes was working, but, in his view, the number of examples of sperm not being found on the ER slides but found on the diff lysis slide warranted an OQI or an adverse event. After that, though, performing a project was not concerning to Mr Cochrane.

There were two delays in the case: one is that first delay that we have discussed between late 2015 and August 2016, and the other is the whole of the project, and both were concerning to him.

In terms of the ESR report, he notes that they were not advised of the particular issue.

His view, and perhaps most importantly in terms of moving forward from here, is that by 2020, using Y-STR processes was best practice in Australia, not using sperm microscopy at all. So in his view, by the time this project finished, what the laboratory should have been focused on was not optimising sperm microscopy but obtaining Y-STR capability.

THE COMMISSIONER: The Y-STR process is a process that concentrates attention by various chemical means upon the male DNA content of any sample?

MS HEDGE: Yes, that's right. It separates the male DNA and it looks at only that.

THE COMMISSIONER: So that if you have a huge amount of female DNA and a tiny amount of male DNA, whereas the

normal process would give prominence to the female component and, I think the expression is, it might swamp the male component because it's so small by comparison, the Y-STR method concentrates solely upon the male component of the DNA if it is there, and then the male component can be looked at without the female component having an influence upon the profile that results, so you get a cleaner picture of the male DNA, whatever it is worth.

MS HEDGE: That's right, and by 2020, Mr Cochrane's view is that that was best practice in Australia.

THE COMMISSIONER: Did FSS have that capacity to do work in that way?

MS HEDGE: They did not, and they still do not. There is a project ongoing, which Dr Kogios and Ms Baker, the experts looking at the current operation of the lab, can speak about the week after next. So there is a project ongoing, but the lab has not yet been able to validate Y-STR, so it still lacks that capability.

In terms of witnesses that relate to this topic, Mr McNevin will be called after Mr Cochrane. It may be that he is the only other witness called to give oral evidence and that others will simply be dealt with by their written statements, other than, of course, Mr Howes, Ms Allen and Mr Csoban, who will all be called in the next two weeks or so.

THE COMMISSIONER: Yes.

MS HEDGE: If now is a suitable time for the morning adjournment, we can set up the videolink for Mr Cochrane.

THE COMMISSIONER: Yes. It's 25 past 11. Shall we resume at a quarter to 12?

MS HEDGE: Thank you.

SHORT ADJOURNMENT

THE COMMISSIONER: Yes, Ms Hedge?

MS HEDGE: Just before I call the next witness, could I deal with the documents that I tender.

THE COMMISSIONER: Yes.

MS HEDGE: There is an index, which I will tender as an exhibit, but can I just indicate some small amendments, given some of those documentary difficulties we encountered in the opening.

For the parties who have this document, item 28 will have a new FSS number, and the description should be "Email from Allan McNevin to Amanda Reeves". There will be a new 34A, which is [FSS.0001.0067.6325], an email from Justin Howes to Allan McNevin, dated 12 May 2016. And number 51 now has a number [WIT.0029.0005.0001].

What I propose, Commissioner, is that I give you this index, which has some handwritten amendments, at least as a placeholder. If you could give it an exhibit and then an exhibit number for the bundle of documents.

THE COMMISSIONER: Yes. The list of documents to be tendered in relation to the sperm microscopy issue is exhibit 90.

EXHIBIT #90 LIST OF DOCUMENTS TO BE TENDERED IN RELATION TO THE SPERM MICROSCOPY ISSUE

THE COMMISSIONER: The bundle of documents in relation to the sperm microscopy issue is exhibit 91.

EXHIBIT #91 BUNDLE OF DOCUMENTS IN RELATION TO THE SPERM MICROSCOPY ISSUE

MS HEDGE: We will replace that with a fully updated clean index when we can.

THE COMMISSIONER: Thank you.

MS HEDGE: Thank you. The next witness is by videolink. It is Mr Clint Cochrane. I call Mr Cochrane.

<CLINTON MARK COCHRANE, affirmed: [11.54am]

<EXAMINATION BY MS HEDGE:

MS HEDGE: Q. Can you see and hear me, Mr Cochrane?
A. Yes. You're very small, but I can see you.

Q. Thank you, I think. You are Clinton Mark Cochrane; is that right?
A. That's correct.

Q. You are the laboratory manager of Forensic Biology/DNA in New South Wales?
A. That's correct.

Q. You have provided a report to the Commission dated 10 October 2022?
A. I did.

Q. Could I have that brought up on the screen. [EXP.0004.0001.0001]. Do you see that there, Mr Cochrane?
A. I do.

Q. That's the first page of your report?
A. It is.

Q. There are two appendices to that report, the first being your curriculum vitae and the second being your instructions and index to brief?
A. Yes, that's right.

Q. Can we have a quick look at appendix A, which is [EXP.0004.0002.0001]. This sets out your qualifications that you have obtained?
A. Yes.

Q. And your current position?
A. It does, yes.

Q. You have held that position since 2018, so four to five years?
A. That's right.

Q. Moving over on to the second page of that document, it sets out at the top of the page, if we can zoom in there, please, operator, your previous relevant experience in forensic DNA?
A. Yes, that's right.

Q. So you have been working as a biologist at one level or another, in increasingly higher levels, since 2002; is that right?
A. Yes, that's right.

Q. So 20 years in this field?
A. Yes, a little bit over.

Q. Is it the case that you have had a particular research interest in sexual assault-type casework, including the presentation of sexual assault investigation kit evidence; is that right?
A. Yes, that's right.

Q. Thank you. You were engaged by the Commission to deal with a topic that at least here we've been referring to as sperm microscopy?
A. Yes.

Q. You were asked a number of questions about how the laboratory dealt with that issue that arose in late 2015 or early 2016; is that right?
A. That's correct.

Q. Can I just take you to some particular parts of your report. Can we turn to page 5 of the main report, please, operator, and if we can expand on the bottom half of the page from the heading. Do you have your report with you, Mr Cochrane?
A. I do.

Q. You are welcome to refer to it if it's easier than the screen - whatever is easier for you.
A. Okay, thank you.

Q. We see there the question that was asked:

Whether the methods, systems and processes in relation to sperm detection, testing and analysis was consistent with international best practice when the issue arose in 2016.

So this is before any actions were taken by the laboratory. In paragraph 22, you conclude that they were in line with best practice, assuming that those processes were working?
A. Yes, that's right.

Q. Is it your view that the particular instances of sperm not being found on the ER slides but found on the diff lysis slide suggests that the process was not working?
A. I think it's the disparity between the sperm densities that we're seeing between the evidence recovery and the

differential extraction slide that leads to the conclusion that it is not an optimal method used in the evidence recovery process to create that sperm microscopy slide.

Q. So is it the magnitude of the difference that was of particular import to you?
A. Yes, if they were very close, it could be just random occurrences or slight differences in dilution factors between the methods that could cause slight differences. It was the magnitude of differences between the two sperm microscopy readings that gave rise to the concerns about the evidence recovery process for creating sperm microscopy slides.

Q. And so the difference between - we've heard this morning a little about that semiquantitative scale, but is the difference between zero and 3+ a very big difference?
A. It is very big, yes.

Q. Can we turn, then, to page 6 of the report. In paragraph 24, you say that your opinion is that those multiple instances of sperm not being found in ER slides but then in abundance on a differential slide would warrant an OQI or an adverse event?
A. That's right.

Q. Does that relate to whether these issues could be simply variability within the lab or a systemic problem?
A. The differences between the amount of sperm found between those times - it didn't just happen once. If it happened once, you could put it down to a one-off event. The fact that it was seen on multiple occasions and raised by multiple people within the laboratory over a period of time would suggest that there was something of a systemic nature in underperformance of the evidence recovery process to make sperm microscope slides.

Q. What's the benefit of it being an OQI or an adverse event as opposed to not being recorded in those quality management tools?
A. The way that quality management usually occurs is you flag that there is an issue through a mechanism within the laboratory. So in Queensland, it appears that it's an OQI or an adverse event. Typically you raise these notices, and, from there, that leads you to an investigation in terms of what is working or not working in terms of the quality of that process.

Q. Can we turn, then, to paragraphs 26 to 27, and this deals with the time period before which the workaround was implemented in August 2016. You understand the time period I'm talking about?
A. I do, yes.

Q. You identify in paragraph 26 that there was about six months between the issue being initially flagged and the initial project request and then about eight months between that initial issue being flagged and the workaround, and you say this meant that a suboptimal method was used for approximately eight months after concerns were initially voiced?
A. That's right.

Q. In paragraph 27, you say that's an excessive period to initiate an investigation?
A. Yes, given those three points (a), (b) and (c) below.

Q. What sort of time period would you have expected the workaround to be implemented within?
A. It's not only the time frame; it's the amount of times that it was flagged as a concern. It happened on multiple occasions within a three-month period. If there's an issue that's raised as a one-off event, then a wait-and-see approach is not typically that bad an idea with situations like that, depending on the significance of the event. The fact that it was happening on multiple occasions within a few months would suggest that it was probably to be seen as an issue of concern.

Throughout that period from three to six months, for instance, there were on multiple occasions emails also suggesting that the reporting biologists in particular were quite concerned about the matter and the consequence that some DNA samples might not be tested. So in that time frame, I would have expected probably three months as the outside limit, especially when you started seeing multiple occasions being reported in a fairly short period of time.

Q. That workaround that was implemented on 8 August - that is, for every case, to look at the ER slide and the diff lysis slide - is that an obvious workaround or is that one that would have taken a lot of effort to consider?
A. That workaround was effectively part of their process already in their SOPs. So the evidence recovery slide is

one opportunity to create a slide. The differential lysis, which is when a samples goes through for testing specifically for semen, extraction method for semen, is another opportunity to make that. So that was already an option to be made within the process prior to that fix being put in place. Effectively, what it meant was that it was being done as a routine on all samples suspected of containing semen, regardless of what the sample is. So I would have said that that was a fairly logical step if you were unsure about the adequateness of the evidence recovery process to make slides.

Q. Did you see any reason or can you think of any reason why that wasn't done in, say, March 2016, when the email came from Ms Wilson indicating a further example?
A. Not in particular. I can't see any great reason.

Q. You say in paragraph 28 that that workflow modification largely resolved the ER sperm microscopy issue, ensuring that samples containing sperm progressed as required. But then Project #181 continued, and so do we take from that that Project #181 looked at a much wider range of issues than the particular sperm microscopy issue that had been raised in late 2015, early 2016?
A. Project #181 went through a number of different phases. I think there were seven parts, from my report. Originally it was looked at that they were looking at the effectiveness of the evidence recovery slide process, followed by trying to make a change or to check out a different option for the evidence recovery slide process. From that point onwards, they largely made the decision to move towards the slide preparation in the differential extraction part, and from that point onwards, they were really trying to move towards the differential slide as the port of call but also to modify the evidence recovery process to maintain the ability to do presumptive testing in retrospect as well.

Q. And so Project #181 did not identify a root cause of the problem that was identified; is that right?
A. I think that there was - it was acknowledged that their evidence recovery slide was not creating sperm density readings in line with either the DNA results or the differential slide readings. So I think that they quite quickly came to the conclusion about the issue was in some way in the evidence recovery preparation. They ruled out that it was a personnel issue where the staff were unable

to visualise sperm under a microscope, so really it was around the creation of the evidence recovery slide. So they, in effect, did come to the cause of the issue, being the preparation of the evidence recovery slide. They probably didn't go to a further sub-step of why that wasn't working, apart from noticing that it wasn't working prior to and also in the first stage of that Project #181.

Q. Can we move forward, then, to paragraphs 47 and 48, which appear on page 9. Here you deal with a data analysis that was performed to look at samples that may have been affected by this inadequate process. You identify there that there was a data analysis of samples between 8 August 2016 and 28 March 2017. Do you see that?
A. I do.

Q. And 147 of those 738, there was a difference between - there was no sperm on the ER slide and some sperm at least on the differential slide; is that right?
A. That's correct.

Q. Now, can we go through paragraph 48 together. Of those 147, (a), 71 would have been tested anyway due to other sorts of results?
A. That's right.

Q. Can we turn on to the next page and look at (b). In (b), 47 samples would have progressed through DNA testing using the routine cells protocol. Can you explain what the cells protocol is?
A. So I'll probably start with a differential protocol is basically trying to separate sperm cells from the remainder of the DNA. In terms of the cells protocol, that would be their routine extraction protocol that's used that is not performing the differential component, trying to separate any cellular components. Effectively, it is extracting DNA from any potential cells that are in that sample as opposed to a component of the cells.

Q. You say that that method may be less effective for internal swabs. Can you explain to us why that would be?
A. For an internal swab, typically internal swabs are highly cellular-dense areas, so any competing - if you're trying to find the DNA of a foreign person, so not the person who owns the body cavity, they're in competition with the person's own cells to try to find the other person's DNA. So effectively the person's own body might

swamp the DNA profile, making it so you wouldn't be able to visualise the component of DNA from a different person than the person whose body cavity it is.

Q. How much less effective is it than the differential lysis process?
A. For sperm, are you talking about there?

Q. Yes.
A. Okay. For sperm, it's very effective to be able to separate the sperm cells, so effectively it renders the background material irrelevant and you are targeting the component of the DNA that you are interested in. So in terms of not performing that differential lysis component if sperm is available, what it means is that you may be unable to pick up the profile of the unknown person or the person who it's not their body. In terms of how much of a concern this would be would be heavily based on the area that the sample was taken from and also the material that the external person could have left as well.

Q. So can you give a generalised - is it much less effective or just a little less effective, or what's your view?
A. If you have a significant amount of sperm, you are better off using a differential lysis, because you are much more likely to get a probative result.

Q. Then in (c), you have 29 samples would not have been DNA tested, and, of those, 28 would not have recovered new evidential DNA profiles and one would have recovered new DNA evidence; is that right?
A. That's correct.

Q. And so in paragraph 49, you conclude, and I understand the Queensland lab also concluded, that only one of 738 samples would have been heavily affected; is that right?
A. Yes, if you were using the previous --

Q. Just going back to - I'm sorry?
A. If it was using the previous workflow, it would have been affected, yes.

Q. Can we just go back to paragraph 48 and have (b) and (c) on the screen. Could I just ask you about these. Given that the cells protocol is less effective than the differential lysis process, is it right that perhaps some

of those 47 samples would also have been affected by the previous workflow, because sperm would not have been detected when it was in fact present?
A. Yes. It also probably would mean that if it was used through the other method with cells, it may be that you could not define the cellular component as being from semen as well, which may have evidential value.

Q. And of the 28 in paragraph (c)(i), the way that was calculated is whether there was a new DNA profile - ie, a new person who hadn't been identified from some other swab; is that right?
A. Yes. So these 28 samples would not have been tested previously, but when they were tested, there were other results within the sexual assault investigation kit that would have obtained the same information or the DNA results were unsuccessful or non-comparable.

Q. When you say the "same information", do you mean the same identification of a person?
A. Yes. So I'll use the vaginal cavity for example. If you took multiple samples from the internal vaginal cavity, if you find a DNA result from the endocervical swab, for instance, that is still indicative of pretty much the internal vaginal cavity, so finding the same profile on the endocervical swab, the high vaginal swab, the low vaginal swab would not give you any additional information that just one of those samples would have provided.

Q. I understand. Is it the case, though, that there could be a case where a sample would give extra information, for example, if the allegation was ejaculation on to a hand or on to the back, and that's the one that was missed, that swab, then the fact that that same person's spermatozoa was on the high vaginal swab would actually give extra information?
A. Yes --

THE COMMISSIONER: I'm not sure that's a question that Dr Cochrane can answer better than anybody else who is familiar with criminal trials.

MS HEDGE: Perhaps I should ask it in this way.

Q. That example I just gave, that would have fallen within - the way they did the data analysis, would have fallen within the 28, that wouldn't have made its way into

the number (i)?
A. Yes, I believe so.

Q. So is it fair to say, then, that taking into account those examples that we have just done, at least one sample would have been heavily affected - that's the one in paragraph (c)(ii) - but there may be others that would have been heavily affected, depending on the particular case?
A. Definitively one. The other ones - there potentially could be more, yes.

Q. Thank you. Can we go back, then, to paragraph 36 of your report, and this is where you deal with whether there is an opportunity for retesting of these samples. I'm sorry, before we go on - sorry, we can put paragraph 36 up, please, from both pages, if possible. What the Queensland lab did - correct me if I am wrong, Mr Cochrane - is did that data analysis after the workflow had been put into place and drew from that conclusions about what might have been happening before the workflow was in place - the workaround?
A. Yes, the data analysis was from the period - it was roughly nine months following the introduction of both the evidence recovery and the differential lysis slides both being examined, so it was basically a concurrent test of those first nine months to see what the believed effect would be if they did a retrospective analysis of other casework.

Q. Was that data analysis done as part of Project #181 or was it separate?
A. I believe it was separate.

Q. Was there a conclusion drawn because of those statistics - that is, the one out of 738 - that they wouldn't do any other reconsideration of the previous samples?
A. I believe so, yes.

Q. Here at paragraph 36, you deal with the opportunity to consider retesting?
A. I do.

Q. You say that there should be some case-by-case analysis of whether there was other evidentiary results or whether there has been a conclusion to the case; is that right?

A. Yes.

Q. And that would narrow the number of cases that might benefit from retesting; is that right?
A. That's correct.

Q. You suggest that should be done with consultation or with information sharing with police and courts, potentially defence lawyers as well?
A. Yes. I'm doing this on the basis that - an example would be a sexual assault allegation; if the consent, for instance, was the area of concern, the DNA evidence is unlikely to provide evidential results one way or another. So I think that you could limit the amount of retesting that would be required for these cases.

Q. In paragraph 37, you recommend or you say that the Queensland lab should perform a data analysis to identify cases fitting those criteria so that they can then determine how big this task would be of checking what might have been missed?
A. If it's practical. So it comes down to, this is a while ago and obviously LIMS do make a difference of how practical it is to be able to do this. Given the previous data analysis that we have been talking about, it is believed that the amount of samples that could be affected would be minimal with this case. So if you could make an easily identifiable way to be able to extract these data, and there really shouldn't be that many cases that it applies to, then the testing would be quite minimal, you would anticipate, in this circumstance.

THE COMMISSIONER: Q. Do I understand you to mean that you can get a list of cases that underwent the process, and you can then get a list from police of cases that have been finalised in one way or another, so you can exclude all of those --
A. Yes.

Q. -- as your first step, for example, and then you can take other steps to exclude other cases, and that would leave you with a much smaller class of cases that would warrant thinking about further, and, of those, maybe if you consider the criteria for selection for retesting, or for testing, then you would expect that you would end up with a manageable number of samples that would require retesting, not hundreds?

A. Yes, that's right. So if you had a way to easily identify the samples through a LIMS system that would meet the criteria that I have put elsewhere in this, in my report, then I would expect that the amount of rework that would need to be done on these samples would be quite minimal.

Q. If this error had arisen in your laboratory, is that what you would direct be done?
A. In 2016, that's probably - I would do that, because our LIMS would cater for us to be able to do this search.

THE COMMISSIONER: Yes, thank you.

MS HEDGE: Q. Can I turn to a different topic now - I'm sorry, the last thing I should say on that topic is your view is that some of these samples might benefit from Y-STR testing?
A. Yes. I would say that just broadly, sexual assault investigation of cases that haven't had prior Y-STR testing, there is a potential avenue for investigation, whether it's within this dataset or other datasets. So it is just a way that you can retrospectively test samples further.

Q. Is the Y-STR method a more effective method than the differential lysis and sperm microscopy method?
A. They're done for slightly different purposes. So the ideal situation would be that you would have a sperm microscopy method that was robust, that gave you the results that you wanted. You would do the differential extraction on the samples that had sperm for these circumstances; and for things that didn't have sperm, you could put in for Y-STR testing instead. To do a Y-STR test, you can do that on the epithelial fraction in the differential extraction, but the differential extraction is quite an inefficient method, where there is considerable cellular loss during the method. So there are methods that are extraction methods that are better if you are going to use a Y-STR analysis instead of the differential extraction.

Q. Just taking a step back in how the process works, is it right that using the suspension method, you obtain a sample that has all the cells, sperm and other epithelial cells and so on, all together in the suspension; and then when you do differential lysis, that changes that whole

solution into just having the sperm. Is that right?
A. It changes it into two components. It changes it into the sperm cell component and then the epithelial fraction component, so it's effectively removing sperm from the remainder of what is in that sample. A small thing, that is what Queensland, the QHFSS, did in terms of the suspension method. Their suspension method isn't what is performed at FASS in New South Wales.

THE COMMISSIONER: Q. You have the Y-STR process in place; is that right?
A. That's correct.

Q. When did you implement that?
A. The first time we implemented Y-STRs was using Yfiler in 2009. Subsequently, I believe it was 2018 or 2019 that we implemented Yfiler Plus, which is an updated Y-STR kit.

Q. So you began using the process in its then current form in 2009?
A. That's right.

Q. Does it take a great deal of trouble and expense to validate it and implement it?
A. I would say any amplification kit has its problems in validation and implementation that you have to overcome with a thorough process to do the validation and perform any troubleshooting that comes along, but any time that you put in an amplification kit, the laboratories are well placed to overcome those obstacles.

Q. Were you at the lab in 2009 when the first system was instituted?
A. Yes. I started in 2002.

Q. Can you recall how long it took to validate and implement the system for 2009?
A. No would be the short answer.

THE COMMISSIONER: Thanks very much.

MS HEDGE: Q. How about 2018/2019, when you validated Yfiler Plus?
A. It would have taken months.

Q. Months, did you say?
A. Yes.

Q. Thank you. I'm sorry to take you back to the suspension method, but I just want to confirm, once you have done differential lysis, you don't retain any part of that mixed solution that had both the epithelial and the sperm in it; is that right?
A. They're split into different components. If the differential extraction works as it's designed, and it's not a foolproof process, the idea is that the separate the sperm fraction from the epithelial fraction as far as possible, so they become separate tubes.

Q. And without retaining some part - I'm sorry?
A. They go into separate tubes.

Q. So there's no retention of any part of that initial suspension?
A. Depending on the laboratory policy would be depending if they keep the original substrate in a basket.

Q. What I'm seeking to ask is, and perhaps I will just ask it more directly, are you on the back foot or are you starting from behind, having already done differential lysis, to then send these samples to Y-STR? Are you in a worse position than if you just sent them to Y-STR at the start?
A. If you did a Y-STR, the best way to get a DNA profile for Y-STRs would be to use the cell method, the routine extraction protocol, not a differential lysis. Differential lysis is designed to try to get the sperm fraction specifically, but as I said, it's a very inefficient method, where there is considerable cell loss along the process. So you are better off doing a routine cell lysis to be able to get a maximal amount for Y-STR testing.

Q. Can we turn to paragraph 56, please, which is on page 11. Here you conclude that by 2020, utilising Y-STR testing in sexual assault investigations is considered best practice?
A. There is no such thing as a designated best practice. There are two options that are considered acceptably good practice. The first would be to be able to create evidence recovery slides that are reliable and produce the results that are expected, and then go through and choose whether to do differential extraction and/or a routine lysis, depending on which DNA typing kit you want to use. The

other option that is recommended in the United States, for instance, is what they call a direct to DNA process, where effectively all samples are put through for DNA and they use the Y quantitation as a screening tool to determine what testing - sorry, what DNA typing kit to use.

So both of those methods are in place for different purposes. The direct to DNA method would be considered appropriate for areas that are especially backlogged in their sexual assault investigations. Other laboratories could potentially take the first option for a more nuanced approach to be able to determine which way they want to proceed with their evidence.

So I think either option can be chosen and would be considered best practice. It comes down to the resources you have available, the time that you have available to do things and what tools are at your command.

Exclusively doing differential extractions throughout the piece, though, for instance, would limit your chances of being able to obtain Y-STR profiles from those samples, especially ones that don't have sperm, sorry.

Q. So if you put aside time, resource, backlog considerations, resourcing considerations, is there a scientific best practice, putting aside those things?
A. Both of those methods that I said are best practice. So in terms of if you can get reproducible results in your sperm microscopy, either by the doctors who are collecting the sexual assault kits creating slides or the evidence recovery team using a method that actually is effective, I think that the first method is actually better because then you can choose which extraction method you want to use to determine what is the most effective way to recover the DNA type that you are wishing to target.

So if sperm is available, you will potentially do the differential extraction as your predominant test, because you are trying to remove the female from that. If you don't have the ability to do the differential extraction because there is no sperm present, then you are better off maximising the amount of DNA that is present in the sample to target for Y-STR testing.

Y-STR testing isn't as discriminatory between individuals. It is to a familial, a paternal line. So,

for instance, my father, myself and my son would all have the same Y-STR profile. So there are limitations that Y-STRs give.

What it does give you an opportunity to do, if you use Y-STRs, though, is to recover DNA profiles that you wouldn't see because the internal swabs - DNA that are contained within those internal swabs are probably swamping whatever remnant DNA is left from a potential sexual offender.

Q. I will try to summarise this: the two best practice methods, one is a reliable evidence recovery slide production, and one is direct to DNA?
A. I would say that - it could be evidence recovery or it could be prior to that, so the slide is made at the hospital as opposed to in the evidence recovery process.

Q. I see. So a reliable slide-making process right at the start, or direct to DNA?
A. Yes, they are two acceptable methods, depending on what you are trying to find.

Q. And neither of them are currently in place at the Queensland lab?
A. No.

Q. By "no", you are agreeing that neither of them are in place, just to confirm?
A. Yes, neither of them are in place. If you were to - it would be closer to the second model, but it's not a like-for-like comparison.

Q. So the difference - so Y-STR and differential lysis are two potential secondary steps once you have got that reliable slide-making capacity - that's what you have explained; is that right?
A. That's right.

Q. So the problem with the current process is that they don't have that reliable slide-making capacity either at the hospital or in evidence recovery?
A. Yes, so the only reliable method they had demonstrated in the laboratory was the differential slide.

Q. Thank you. Finally, can we deal with the report given to ESR, which is paragraphs 51 to 54 on page 10, and you

reviewed the material given to ESR?
A. I did.

Q. Your conclusion in paragraph 54 is that on the material you obtained, or you were given, briefed with, by the Commission, ESR were not specifically tasked with assessing the microscopy issue, its cause or its potential solutions; is that right?
A. Yes, that's right. If I can draw your attention to 51, the apparent only reference to this issue was the quote:

> *An issue has been raised specifically regarding spermatozoa negative, acid phosphatase negative sexual assault samples, however a review of the processing of SAIKs would be appreciated in the spirit of continuing quality improvement.*

That appeared to be the only reference to the sperm microscopy issue that we've been discussing.

MS HEDGE: Thank you. Those are my questions.

THE COMMISSIONER: Thank you.

MR HUNTER: No questions, thank you.

<EXAMINATION BY MR RICE:

MR RICE: Q. Mr Cochrane, I just wanted to get you to clarify, if you would, some aspects of the workflows that you refer to in paragraphs 20 and 21 of your statement. Perhaps if we bring that up and you can refresh your memory about what you have said.
A. Thank you.

Q. It is page 5 of the report, please, Mr Operator. Paragraph 20 deals with workflows that you identified as being in place from September 2010; am I right?
A. Could we scan in on that? I'm looking on a fairly small computer.

Q. Sure. If you would enlarge paragraphs 20 and 21, if you would, Mr Operator.
A. Sorry, could you repeat the question?

Q. I was just drawing your attention to paragraph 20. Is it right that you describe there the workflows as you identified them as being in place in September 2010?
A. Yes. That's the document that I referred to, with that method.

Q. It is SOP number 17189 version 10; correct?
A. That's correct.

Q. I'd just like to show you a portion of that. Mr Operator, the document is [FSS.0001.0052.7882]. That's the facing page. Can you see that, Mr Cochrane?
A. Yes.

Q. Could I ask you to go, Mr Operator, to page 7894. I just wanted to ask you, it appears that that is a representation in diagrammatic form of what you have described within paragraph 20.
A. Yes. That appears to be the case, yes.

Q. In paragraph 20, you have set out subparagraphs (a), (b) and (c). They are represented on this diagram by the three boxes, one containing the words "Internal swabs" on the one hand; secondly, "External swabs"; and, thirdly, "DNA (DLYS)". Do they represent those three options?
A. Yes, also 20(a)(i) was the DNA (DLYS).

Q. Correct, and that's the one "DNA (DLYS)" towards the top left of the diagram; correct?
A. Yes. So the four boxes would be (a), (b) and (c) - the contents.

Q. In paragraph 21, if we go back to the report, you refer to another SOP there, being 32106 version 3. You note in the last sentence that that SOP details how the case context may modify the laboratory progression; correct?
A. That's right.

Q. I'd just like to explore the way in which that is so. Mr Operator, could you bring up document [WIT.0044.0007.0001]. Perhaps, Mr Operator, if you go to the bottom left-hand corner where the document ID resides and just allow Mr Cochrane to see that.
A. Yes.

Q. That's the document you are referring to at

paragraph 21; am I right?
A. That's correct.

Q. Could I go firstly to page 6, where there is an amendment history. Could you enlarge the amendment history, Mr Operator. You know how these things work: when a version is updated, the update goes into the amendment history, and we see as against the amendment what is the nature of the amendment in the case of each version; correct?
A. Yes.

Q. Is it right, then, to conclude that this SOP first commenced operation on 23 October 2013?
A. Yes.

Q. And we can see the nature of the amendments to the second and third versions in the final column; correct?
A. That's right.

Q. If we go from there to page 7, to a diagram, does this diagram then represent the applicable workflow apparently commencing with version 1 in October 2013?
A. It appears so, yes.

Q. Just to be fair, Mr Operator, if you would go above the diagram to the introductory heading and the wording. This diagram relates to SAIK examination workflow, which - correct me if I am wrong - was the same workflow as you described in paragraph 20 of your report?
A. Yes, that's right.

Q. So this is a more recent and perhaps more updated version of the workflow from that which you described in paragraph 20?
A. If you pull up the workflow diagram in its whole, it's effectively - if you say "Microscopy" down in that workflow, it is pretty similar. It's the same from that point, obviously, just not particularly - they are using "exam strategy" instead of other options that are available. But it does appear to be a more updated version taking into account exam strategy as well.

Q. What I was going to suggest is that this appears to introduce for the first time - and you can tell me if I am right - this appears to introduce for the first time the concept of examination strategy?

A. Yes.

Q. And to understand that, Mr Operator, could we go back to the first page, 4.1, the paragraph "Examination Strategies", this is what appears to be new, am I right, with this workflow - the concept of development of a workflow strategy for all SAIKs?
A. That does seem to be the context of this case, above and beyond what - just the sperm microscopy. Sexual assault cases don't just rely or relate to just microscopy in itself, so I think that the method that is being put up really is going through what you would do if you received a sexual assault investigation.

Q. I see. So the concept is wider than microscopy?
A. Yes. It's wider than just SAIK kits as well. It's more inclusive.

Q. I understand. But if we go back to the diagram at page 7, we see towards the bottom right of the diagram two boxes with the words "Exam strategy". Do I interpret that correctly that in the event of negative microscopy and negative presumptive testing, this introduces a further layer to the process by way of recourse to the examination strategy once those screening tests have been concluded?
A. Yes, it does give an avenue to determine what is further using an exam strategy. I do believe that further on in this document, it talks about some specific scenarios where exam strategy would be used.

Q. It is a form of discretion, is it not, to the scientist to determine what ought be done in the context of all of the case history and all information known, irrespective of the fact that all screening may in fact be negative?
A. Yes.

Q. And is it right to say that that further discretionary step is an additional form of risk mitigation for missing evidence even where all screening is negative?
A. Potentially, yes. It depends on how it would be used.

Q. Well, as you say, we don't need to go to it, but there are guidelines within the document as to what matters may be relevant to that. I'm wondering, then, if you could tell me this: given that from October 2013 there appears to be this additional discretionary element to the

processing of SAIK samples, allowing a scientist to make a decision about that even if all screening is negative, whether that, in turn, feeds into the size of the problem created by the inadequate process pertaining to the ER slide? Do you see what I'm getting at?
A. No, sorry, I didn't follow.

Q. Do you accept that the examination strategy provided for in this document is an additional form of risk mitigation against missing cogent evidence?
A. It allows a biologist some options to be able to perform further testing, potentially.

Q. Well, that didn't answer me directly. Is it a form of mitigation of risk of missing evidence?
A. I think yes, potentially. Once again, it would be how the exam strategy is used. If the exam strategy in a certain scenario was no further testing, it wouldn't mitigate the risk potentially, or potentially it could send you down a pathway where other things may be missed. So it really depends on what is taken up with the exam strategy. By having it there, it does give options for people to do certain testing on there, so it potentially could be a risk mitigation strategy. It depends on how it is used.

Q. You acknowledge, though, that at the very least, that is a form of discretion which apparently didn't exist according to the workflow diagram we looked at for 2010?
A. Yes.

MR RICE: Thanks, Mr Cochrane.

By the way, Commissioner, that document doesn't appear to be on counsel's tender list, so I propose to tender it.

THE COMMISSIONER: Yes. It is current from what date, Mr Rice?

MR RICE: Version 3 is current from 29 January 2015.

THE COMMISSIONER: 2015?

MR RICE: 2015.

THE COMMISSIONER: Document [WIT.0044.0007.0001] is exhibit 92.

EXHIBIT #92 STANDARD OPERATING PROCEDURE 32106 VERSION 3, CURRENT FROM 29 JANUARY 2015, BARCODED [WIT.0044.0007.0001]

THE COMMISSIONER: Does anybody else want to ask Mr Cochrane any questions?

MR DIEHM: No, thank you.

MR HICKEY: No, thank you.

THE COMMISSIONER: Ms Hedge, do you have any re-examination?

MS HEDGE: No, I don't. There is also Ms Freeman here, for Mr McNevin.

THE COMMISSIONER: Yes.

MS A FREEMAN: Thank you, Commissioner, I seek leave to appear on behalf of Mr McNevin. We don't have any questions.

THE COMMISSIONER: Thank you, Ms Freeman, you have leave.

MS HEDGE: I don't have any re-examination. Might Mr Cochrane be excused?

THE COMMISSIONER: Thank you, Mr Cochrane, for your assistance and for the work on your report. You are free to cut the link, if you wish.

<THE WITNESS WITHDREW

THE COMMISSIONER: Yes, Ms Hedge where do we go next?

MS HEDGE: The next witness is Mr McNevin. I wonder, given the time, whether we might adjourn now and resume at 2 o'clock or 2.15 and start afresh with him.

THE COMMISSIONER: Let's adjourn until 2.15.

MS HEDGE: Yes. There is no rush, I don't think.

LUNCHEON ADJOURNMENT

THE COMMISSIONER: Yes, Ms Hedge.

MS HEDGE: Thank you, Commissioner. I call Allan Russell McNevin, who is present in the witness box.

<ALLAN RUSSELL McNEVIN, affirmed: [2.21pm]

<EXAMINATION BY MS HEDGE:

MS HEDGE: Q. You are Allan McNevin?
A. Yes.

Q. You are currently a reporting scientist at the Queensland Forensic and Scientific Services DNA laboratory?
A. Yes.

Q. You have provided three statements to the Commission; is that right?
A. Yes.

Q. The first of those is [WIT.0040.0001.0001_R], dated 21 September 2022. It primarily deals with your work history, the Options Paper and the Update Paper; do you remember that statement?
A. Yes.

Q. The second is [WIT.0040.0018.0001], if we can have that up. It was sworn 10 October 2022 and deals with OQIs and two particular OQIs from 2012?
A. Yes.

Q. The third statement is [WIT.0040.0077.0001]. It was signed last Thursday, 13 October, and deals with bones, validation, sperm microscopy and DNAIQ extraction; is that right?
A. Yes.

Q. Those are all the statements you have provided to the Commission so far?
A. Yes.

Q. In that third statement, there are a number of exhibits, and exhibits 99 and 100, which appear on page 62 of that third statement, are two reports prepared by a company called Livingstones, which were provided to you in a redacted form?
A. Yes.

Q. I understand you are content to remove those exhibits

or withdraw them from your statement, so they don't form part of your statement before the Commission; is that correct?
A. I'm okay with that, yes.

MS HEDGE: In exhibit 90 - Commissioner, these three statements of Mr McNevin have been tendered, so could it be identified that for item number 3 on exhibit 90, the exhibits ARM-99 and ARM-100 are withdrawn from that statement?

THE COMMISSIONER: I'm sorry, could you tell me what you mean by that? Exhibits 1, 2 and 3 are Mr McNevin's statements?

MS HEDGE: That's right.

THE COMMISSIONER: Or items 1, 2 and 3 are Mr McNevin's statements, yes.

MS HEDGE: In the third of those, within that statement, exhibits ARM-99 and ARM-100 will be withdrawn or removed from that document, so that what is tendered before the Commission is the statement and all of the other exhibits, not including those two.

THE COMMISSIONER: All right. That's fine, thank you.

MS HEDGE: Thank you.

Q. Can we start with sperm microscopy - well, perhaps I should say generally your third statement is the one that I will ask you some questions about, and it is a very comprehensive statement of your involvement in those topics I mentioned?
A. Yes.

Q. So you understand I won't be taking you through every part of it but just some specific parts of it?
A. Yes.

Q. Can we start with a very brief timeline of your involvement in the sperm microscopy issue. Were you aware that the issue was raised in late 2015 and early 2016 by some reporting scientists?
A. To be honest, I'm not sure when I was first made aware.

Q. At that time, you were the senior scientist in charge of the evidence recovery team?
A. Yes, I was, yes.

Q. So you weren't in the same team with those people who raised it, Ms Wilson, Mr Pippia, Ms Reeves --
A. That's correct.

Q. -- Ms Rika; they were all in different teams?
A. They were, yes.

Q. You took some leave, is that right, between about March and May 2016?
A. Yes, I can't really remember, but --

Q. So do you remember what occurred from when the matter was allocated to you by Mr Howes - the investigation of the matter?
A. I actually can't quite remember how it all started, to be honest, and so my best recollections are from what I could find from email records and meeting minutes and that sort of thing.

Q. When it was allocated to you, do you remember whether Mr Howes indicated what level of urgency he thought it needed to be dealt with?
A. From my memory, I don't remember Justin being the one discussing it with me first. I had some sort of conversations with either Paula, who was my line manager, or - I think around that time Paula also had been on maternity leave or was just coming back from maternity leave, so I may have had conversations with whoever was acting in Paula's role beforehand. I don't actually really remember exactly how it was actually raised to me initially, the initial part of it.

Q. Do you remember, whoever raised it with you, what level of urgency that person suggested it needed to be dealt with?
A. I don't remember it being raised as a particularly urgent issue at the time.

Q. What about when you had spent a little time getting acquainted with what the issue was - did you then think it was an urgent issue?
A. Well, we had been using the same process for quite

a number of years, so it didn't seem like this was something like where we'd just implemented a change, and then that change was going, you know, bad. It was something that had been in place for quite a long time and the issue was only just being raised, so I thought it was important to just deal with it in, you know, a structured, orderly manner.

Q. So do I take it from that you didn't see the need to make any urgent changes?
A. It didn't seem to be - no.

Q. Can I take you to paragraph 243 of your third statement, which is page 42, for the operator. You were asked in the question which precedes this paragraph about whether there were any workplace cultural or environment issues that impeded the efficient resolution of the issue, and you identified in the following paragraphs that there were some aspects of the culture within the laboratory that had contributed to the delay in dealing with Project #181 and the sperm microscopy issue?
A. Yes.

Q. In particular, in paragraph 243, you mention a management meeting in June 2016 where you let your emotions get the better of you and raised your voice towards Ms Reeves?
A. Yes.

Q. You have heard some evidence about that at this Commission so far, about that event?
A. Yes.

Q. Is it the case that you apologised to Ms Reeves by email on that day?
A. Yes.

Q. Could I just have that on the screen, [FSS.0001.0084.0001]. Is this a copy of that email that you sent on the same morning as the meeting?
A. Yes.

Q. That was item number 28 in the index that has already been tendered, that email. Could I go back to your third statement and to page 32, paragraph 186. Can we go back to this question of urgency of response. Do you see that you said there that Ms Reeves and Ms Rika "were advocating for

a halting of all examinations for spermatozoa until the problem was resolved"?
A. Yes, that's kind of the way I remember the conversation. Just my best memory of something that happened a while ago.

Q. Of course. Did this occur at the very early part of Project #181, that is, in May and June 2016, or is this conversation at a later time?
A. No, I think that's more - pretty early in the piece, if I remember correctly.

Q. Could I just ask you to speak a little louder for me. I'm just having trouble hearing you.
A. Yes, if I recall correctly, it was early in the piece, yes.

Q. Thank you. From early on, when you were dealing with it, Ms Rika and Ms Reeves considered some urgent action should be taken, and the majority of the management team seemed satisfied with gathering data before taking any action?
A. That's my memory, yes.

Q. Then in August 2016, you implemented what I might describe as the workaround of, for every case, looking at the diff lysis slide?
A. Yes.

Q. Are you content with that phraseology, "the workaround", or would you prefer to call it something else?
A. That's fine. I think we referred to it as "the workaround" in the lab, so --

Q. Okay, good. So now, thinking back, is there any reason why you didn't implement that workaround earlier?
A. From what I remember, I wanted to get some information to determine if there was a problem before we actually did anything. You know, if someone raises an issue, the first thing you need to do is determine if there is an issue before you then proceed with doing anything in response to that. Now, sometimes that is immediately obvious; sometimes it is less obvious.

Q. Is that workaround the obvious workaround to put in place to deal with the issue, or is it just one of a number of potential workarounds that you could have implemented?

A. I think that was probably the most obvious one, I guess. It was a few years ago now, so --

Q. All right.
A. Yes.

Q. Well, I suppose if the problem is a discrepancy between two slides, looking at both of them does seem, to a non-scientist, the most obvious way of resolving it?
A. Yes, but we didn't look at all of both sets. We just looked at those ones where there was nothing seen on the first slide, so let's look at the second slide.

Q. Do you mean after the workaround?
A. Yes, yes. Sorry, that's what I thought we were talking about.

Q. Yes, no, we are. I was just checking you weren't talking about that data analysis.
A. No.

Q. So after the workaround, if there was no sperm on the ER slide, you would look at a diff lysis slide?
A. From what I remember, yes.

Q. So what would have been the negative, if anything, of implementing that workaround in May or June 2016, when you first were allocated to the project?
A. It was a bit more work for my team. It wasn't a huge impost, but it was still, you know, a double-handling of exhibits that took extra time and resources. So, as a manager, you have to weigh those things up. But I don't - I kind of don't really remember having a conversation about the workaround at any point, so I don't really remember at what point it was proposed and at what point we decided to implement it and who actually suggested it. I'm sorry, I can't actually recall how that came about exactly.

Q. I was going to ask who would be the person to determine - would it be yourself or your line manager or their line manager who would have determined that workaround?
A. It could have just been a conversation in the management team, just had in a meeting or something. I can't exactly recall. But it didn't necessarily fall upon just me as the manager of the evidence recovery team.

Any manager or even any sort of staff member who had a good idea could have raised it, and then that could have been considered and implemented. So I couldn't tell you whose initial idea it was to, "Let's just do things this way." It could have been my idea, too. I actually really don't remember exactly how that came about.

Q. Just going back to something that you said a few minutes ago, you said it's important to gather data to identify whether something is a problem?
A. Mmm. Yes.

Q. So did you go about gathering data of discrepancies between the ER slide and the diff lysis slide in the preceding, say, six months or 12 months or some other time period?
A. Yes, I think that was the initial part of the investigation, was we did a sort of a review of a whole group of samples. I can't remember the exact methodology, but I believe that we went and looked at examples of where there had already been the two reads, the read of the evidence recovery slide and the differential lysis slide, and then I think we may have gone back to samples that - I think the idea was we would look for ones that hadn't actually been through the full reporting process and found them and then went and read the differential lysis slide for those as well, so we had a broader number to compare.

Q. Do you remember just approximately how many cases or samples fell into that category that you have described?
A. No. Did I put something in my statement? I can't remember.

Q. I'm not sure that I can answer that, either. Let me ask you this: after you reviewed those, were you content that there was a real problem with the preparation of the evidence recovery slides?
A. Well, again, in the way that you phrase it, that there was a problem with the preparation of evidence recovery slides, I didn't know exactly - but there were some examples where there were some different results, for sure, but they didn't necessarily make up a large number of - most results were as kind of expected. So it was a bit hard to really kind of say, "Aha, that's the problem. We'll work on that."

Q. Let's just take one step back. Were you satisfied

there was a problem that needed something to be done about it?
A. It wasn't obvious that it was a big problem or even a bit of a problem, because you do expect some sort of natural variation when you do laboratory processes. So, you know, the fact that there was some aberrant results wasn't super - it wasn't - for me, anyway, looking at a large number, it wasn't something that I went, "Oh, yes, there's clearly a problem." But at the same time, it didn't look like there was nothing to see, either. There was something worth investigating a little bit further.

Q. Can I move on to something else. Do you remember whether the data analysis that we just spoke of, looking at samples, was done before the workaround was introduced?
A. Oh, I'm not sure of that timeline, sorry.

Q. Do you remember whether the workaround was a response to the data?
A. I don't remember the timeline, so I can't say either way.

Q. Do you remember what the workaround was in response to?
A. No. Like I said, I can't actually remember how we - at what point we decided to - that there should be a workaround and how we came up with that decision. I can't remember whether that was a conversation between me and my manager or whether it was part of the management team or whether someone else from the management team proposed it. I don't remember finding any email records or anything or meeting minutes that were that prescriptive as to what was exactly discussed word for word, so, I'm sorry, it was - a lot of things happen in our laboratory, so I don't always remember every little detail like that.

Q. Can I move on to a different topic, and that is the sampling and analysis of bone samples in the laboratory.
A. Mmm-hmm.

Q. That's the first of the topics dealt with in your third statement. Could we turn to page 1 of that statement, please, operator, and paragraphs 2 and 3. You were the manager of the analytical team from 2006 to 2014 and then the evidence recovery team 2014 to 2021?
A. Yes.

Q. You heard Ms Keller - Ms Angelina Keller, I should say - give evidence last week that at the time you took over the role of senior scientist in the evidence recovery team, as far as she knew, you didn't have any experience with bone sampling?
A. Correct.

Q. Or bone reporting?
A. Correct.

Q. And you accept that that is accurate?
A. When I took over the team, yes.

Q. In paragraph 3, you set out what you did to increase your skills and become knowledgeable in the areas of evidence recovery that you hadn't been knowledgeable in before you became that manager?
A. Yes, so not just bone sampling but all areas of the evidence recovery task.

Q. So did that include bones - well, in fact you say that there?
A. Yes.

Q. That it included the collection, testing and analysis of bone samples?
A. Yes.

Q. You gained some hands-on experience, learnt from your team members and read associated textbooks, journal articles and so on?
A. Yes.

Q. From that, you developed, in your view, a sufficient knowledge base to then make some decisions about bone sampling; is that correct?
A. Yes.

Q. Ms Keller also gave some evidence about the use of Tergazyme in the laboratory.
A. Mmm-hmm.

Q. Can I take you to page 11 of your statement, paragraph 59. So this was a change in the bone cleaning protocol, and that was a matter that was raised with you by a Mr Goodrich. Who is that?
A. Michael is the senior laboratory assistant in the

laboratory.

Q. He's a trained scientist?
A. No, Michael's not a scientist. He's a laboratory assistant.

Q. Are there qualifications required for that?
A. Oh, sorry, no, no, no. It doesn't require a special qualification.

Q. Did you say he's the senior laboratory assistant?
A. Yes. I'm actually not really sure exactly what his role description is, but there's a group of laboratory assistants and he's the senior one of that.

Q. Are the laboratory assistants, Mr Goodrich and others, in charge of things like cleaning equipment?
A. Yes, they do some of the cleaning of the laboratory equipment and consumables and that sort of thing, and they stock cupboards and those sorts of - help the scientists, basically.

Q. So he would have been using the Tergazyme, the detergent; that was his interest in it?
A. No, I don't think it was. I think he may have been just looking at our chemicals that we have and how - like, how we store them. He may have even been doing some sort of health and safety audit. I'm not really sure exactly why it came to his attention, but it did, obviously.

Q. Can we go to that email that you attach there. It is [WIT.0040.0077.0257]. So if you go to the fourth of those pages, to [WIT.0040.0077.0001] - I'm sorry, it is page 259. My apologies. Just the page immediately above that. The email at the bottom of the page there, that's you following up Mr Goodrich about the Tergazyme question; is that right?
A. Yes. So I seem to remember maybe Michael came and spoke to me and I thought it might be easier if he just put all his information in an email, so then I could follow up on it, rather than just relying on my memory. It looks like it was Friday afternoon, so maybe I thought it was easier, it was something I could then deal with on the Monday or something.

Q. And he responded and told you his concerns in the next email?
A. Yes, and I can see there he's reviewing the

specifications and technical info pages on the supplier website. So, for whatever reason, he must have been looking at that information and that's what brought it to his attention, I would imagine.

Q. Now, if we scroll up one more page again, you then forwarded the email to Ms Brisotto, who was your line manager?
A. Yes, she was my line manager at the time.

Q. Dr Scott, who was the quality senior scientist?
A. Yes. And just to put that in context, Kirsten would also be Michael's boss.

Q. I see.
A. Yes.

Q. And Sharon Byrne. Can you explain her role?
A. Yes, Sharon was the workplace health and safety representative for the laboratory at the time.

Q. Looking at that, your email, you say:

Given some issues with using/disposing of Tergazyme ... should we implement the alternative protocol using the dishwasher as outlined in Proposal #148 ...

A. Yes.

Q. I assume you had seen Proposal #148. Was that done while you were the senior scientist?
A. Yes, I think it was finished when I was taking over the role in evidence recovery, but it might have started prior to my role, maybe.

Q. But you were aware of the project?
A. I was aware of it, yes.

Q. And you were aware that it related only to the bone crushing mill part?
A. Yes.

Q. It wasn't all bone equipment; it was just that one --
A. I think, because there was a little bit of time between when that project finished and when that email was sent, I think I had actually asked one of my staff members

to go back and have a bit of a read and let me know what was in it. I probably didn't remember exactly.

Q. The minor change that was implemented after that - sorry, going back to your statement, I will just take you back there first. So your statement, page 11, please. At paragraph 61, you say "consulted with the management team" and implemented a change. Do you remember that that change was to have the particular part of the bone equipment that Project #148 had related to dealt with how Project #148 suggested?
A. Yes.

Q. And all other bone equipment to be dealt with with the ethanol and 70 per cent TriGene; is that right - I'm sorry, do I have that the wrong way around?
A. No, that's okay.

Q. TriGene and 70 per cent ethanol?
A. Yes, I believe, from the top of my head, TriGene is used in potentially a 5 per cent per volume solution. I'm not sure exactly what - how TriGene, whether it gets diluted or not. But the ethanol was 70 per cent, yes. TriGene was the product, yes.

Q. It was bleach, TriGene and 70 per cent ethanol?
A. Yes, and/or - yes, so you wouldn't use all three. You would use a different combination depending on what you're cleaning.

Q. Yes, that's my fault for not saying it specifically enough.
A. That's okay.

Q. Bleach/TriGene and then 70 per cent ethanol; is that right?
A. Yes, correct.

Q. Now, that was implemented at that time for all other pieces of bone equipment, chisels and other things, saws, and so on?
A. Yes, it is my understanding that that was the process we were already using to clean the general laboratory environment as well, in that area.

Q. Was there a specific validation done for bone equipment for that process, to your knowledge?

A. No.

Q. Do you think such a specific validation was necessary?
A. Given the sort of widespread use of those cleaning protocols for everything else in the laboratory, it didn't seem particularly unusual. Whilst bone sampling equipment is different equipment to what might be used in other processes, it's still just equipment that needs cleaning.

Q. Ms Keller also gave evidence that you and Mr Howes had the view that soft tissue samples should be processed, where possible, before any bone samples from a DVI-type incident?
A. Yes.

Q. Why do you hold that view?
A. Soft tissue samples are able to be processed in our standard laboratory process, so they can just slot in to the regular extraction quantification, et cetera, processes that we have in our laboratory. They don't require a specific sampling technique - I mean, well, sorry, everything requires its own specific sampling technique, but not a - bone sampling is a rather labour-intensive sampling technique, whereas it's a much simpler technique to sample some soft tissue, and then that can just slot into a regular DNA extraction batch that has lots and lots of other samples on it, so it doesn't require a specialised DNA extraction batch.

So we can get a rapid turnaround of that result by just slotting it in to the normal routine processes, and that doesn't mean that - it's not an either/or, you can't just do tissue or just do bone. You could just quickly do the tissue, and if it works, great, get a result, don't need to do the bone. If it doesn't work, we can go back and do the bone. So you don't necessarily have to look at it as an either/or, more as a thinking about it in a broader context of how you fit samples in to the routine flow of the laboratory.

Q. Now, you also heard Ms Keller give evidence about a number of mixed profiles that she has seen for bones in the last perhaps 18 months or so?
A. Yes, I heard that evidence, yes.

Q. You say in your statement you weren't aware of that prior to hearing her evidence?

A. No. I was completely oblivious.

Q. Oblivious, did you say?
A. Yes, I hadn't been - sorry, I should have worded that --

Q. I just didn't quite hear you, that's all.
A. Yes, she hadn't - no-one had actually discussed with me that there was an issue with mixtures in bone samples of late.

Q. You finished being the senior scientist in the evidence recovery section in November 2021; is that right?
A. Yes, I think I started as a reporter in November 2021, I think, early in the month, maybe even the start of the month.

Q. Are you competent, in the scientific use of that word, to report on bones?
A. So, no, I haven't received the specific - so it's not really reporting on bones, as such, as the type of calculations that you do when you're using bones for identification purposes, so the parentage testing and that sort of thing. I haven't --

Q. I see. So do you report on bones?
A. No.

Q. And so you haven't personally come across any profiles in bones?
A. No, sorry, because - yes, so I wouldn't have come across any samples - any profiles from bones, so I wouldn't be aware that there was a problem if no-one had actually said to me there's a problem.

Q. You say in your statement that you can't form a concluded view about whether there is a problem with mixed profiles unless you went and looked at all of those profiles yourself and determined what sort of mixtures there were and so on?
A. Yes, just like I said before with the sperm microscopy, you need to look at the data to see what the problems are. So without seeing all the information, I can't draw any conclusions or statements.

Q. Assuming they are mixed profiles that show clear multiple profiles, would you consider that a problem for

the analysis of bones?
A. Look, as a general rule, yes, but I would need to know what the issues are around it, you know, what sort of bones they were, what's - how the sampling was done, what was all the nature of it, is it the mixture arising from the bone itself or is it arising from some other process? There's just too many variables to just make a general sort of sweeping statement about that.

Q. Can I deal with a final topic, which is not covered in your statement. That is about, as a reporting scientist, the information that you receive from the police about a sample and the context of the case surrounding that sample. Is it your view that receiving some further information about samples or cases would assist you to report on those samples and, if so, what sort of information do you think would assist?
A. Yes, so I think it - again, it comes down to the samples you have received and the size of the case, but at times it might be useful to know whether, for example, in a sexual assault case, whether you need - you are looking for semen or not. Certainly from my experience as the evidence recovery senior scientist, that was a question we may have when we receive samples for testing. But, you know, just some additional information that is very sort of minimal, but it might just provide a little bit of context that we're looking for - is it multiple people involved in one side or other of the incident? I don't think it's really necessary to get the ins and outs of the case, you know, we don't need to know the story, just some basic information to help us decide what level of testing we need to do.

Q. What about from your experience in the analytical and evidence recovery teams; do you think there is extra information that could help those teams process samples more effectively?
A. So from the analytical side, no, because the analytical team is about doing the mechanics of the DNA profiling. So once the sample hits the analytical team, all the way through to when the DNA profile is done, that information - those decisions should be made beforehand or can be made afterwards, but in that middle part, I don't think it really has an impact.

From managing the evidence recovery team, yes, there were times when we put samples on hold to seek more information from Queensland Police. So, you know, if we

received an example that was a sample taken from some underpants and they haven't ticked that semen testing was required, did they just forget to tick "semen not required" or was it a case where semen was not an issue because it is an allegation of touch? And if there had just been some very basic information in the case page where you could just quickly check that the allegation was a touch rather than of contact with semen, then I wouldn't have had to bother someone with that question. So, yes, there were times when a little bit of extra information would go a long way.

The same, if you are looking for semen, are you looking for multiple individuals or one individual would be a little bit useful, if you are sampling a very large item and there are multiple areas that are positive for semen. Is there the potential that, you know, semen has come from multiple sources, or has it just come from one? So, you know, that sort of information would be useful. Like I said, we don't need the big story around the case; we just need enough information to enable us to do our job.

Q. Have you had the opportunity to raise that concern, or that suggestion, perhaps is a better way of putting it, your suggestion to have more information, with anyone within the laboratory?
A. Yes, it's something we've discussed, before, yes. And when I say "the information we require to do our job", I shouldn't say that we can't do our job, because we have those communication channels with the QPS. It's more - a little bit more efficient if we don't have to go through the process of question and answer. Yes, at different times, you know, it has been a subject that I've raised before.

Q. Okay. Who have you raised that with?
A. I know I have spoken to my line manager before. I might have even brought it up in general discussions in the management team. I remember discussing what sort of options there may be when we were in development of the forensic register, what sort of pages or something we could sort of create that might be of use. I don't think it was a very - it's not a very straightforward thing, because it requires something at the QPS end, someone to enter data at that end, or something, and I don't think it was a very easy thing to answer.

Q. The forensic register was implemented in about 2017; is that right?
A. Middle of 2017, I remember, yes.

Q. So this is a long-term suggestion of yours; it's not something that has come to you since you have been a reporter?
A. Oh, no, no, no.

Q. You have had that view for at least five years?
A. Yes, something that, you know - yes, yes.

Q. And it has been talked about in the management team in that --
A. Yes, it's not something that we, you know, bring up every week, but I don't believe it's a new thing that I talked about, no.

Q. Over your time in the laboratory, have you seen any change to that, since 2017, any increase in information you are provided with?
A. Oh, I don't think things have changed from what we see is available in the forensic register. I think we get the same information from when it was implemented, if I can recall correctly.

MS HEDGE: Thank you, Mr McNevin. Those are my questions.

<EXAMINATION BY MR HUNTER:

MR HUNTER: Q. Mr McNevin, do you recall a few moments ago being asked about the decision to use a mixture of bleach, Tergazyme and 70 per cent ethanol to clean the bone sampling equipment?
A. Not a mixture of those chemicals, but those different chemicals were discussed, yes.

Q. Using those three chemicals to clean the bone sampling equipment?
A. Well, we discussed that we had been using Tergazyme and we moved to using bleach and ethanol or TriGene and ethanol.

Q. I'm sorry, I inadvertently wrote down the wrong chemical starting with T. It's TriGene, sorry; is that right?
A. TriGene.

Q. So you were being asked by Ms Hedge about the decision to use bleach, TriGene and ethanol to clean the bone sampling equipment?
A. Bleach or TriGene and ethanol, yes. So you use the cleaning agent - either bleach or TriGene - and then you follow that by wiping away the cleaning agent with the 70 per cent ethanol.

Q. You were asked about that and you said that you understood that bone sampling equipment was different; correct?
A. Well, it's not the same equipment that you use for other things. There's certain things, like chisels and what-not, that are only used for bone sampling, that you have no call to use for other evidence recovery processes, but if they were useful in another evidence recovery process, you would use them. They don't have to be just for bone.

Q. But given that they are different, though, why would you use necessarily the same cleaning process for them as for other items?
A. Well, they are only different in that you require a different tool. They are not different as in we have forceps and scissors and other cutters and things that we use throughout the laboratory, so you could - you know, you don't need a unique cleaning protocol for every single individual different tool you have. You can use the same cleaning protocol for lots of different things.

Q. It is important, though, that whatever you do clean them with doesn't cause them to pit or to rust?
A. Yes, and that's why you would use TriGene on certain surfaces, because it doesn't have the same corrosive activity as bleach.

Q. Do you say that there have not been problems with pitting and/or rusting of the bone sampling equipment at the laboratory?
A. In my time as the evidence recovery supervisor, no-one had raised it to me, no.

Q. No-one has ever said to you that the method of cleaning being used was causing the equipment to either pit or rust?
A. Correct. So I implemented that cleaning regime as

we've discussed, via those emails, and no-one has come back to me to say, "Allan, that wasn't the best process. Maybe we should be doing something different. There's a problem with it." I've not had that conversation with anyone.

Q. Can I take you back, please, to August 2017.
A. Sure.

Q. In particular, this is in the period of time that is in the lead-up to the adoption of what I will call the DIFP workflow.
A. Okay, yes.

Q. You understand what I'm talking about there?
A. Yes, yes.

Q. Can we have, please, Mr Woolridge, [WIT.0040.0002.0001] on the screen. These are the minutes - sorry, I should say this is the agenda of a meeting that says that you were present. Do you see that?
A. Yes.

Q. Can you go down the page to the bottom where you see item 4.2, "Sub-Team Updates"?
A. Yes.

Q. Now, at this stage, in 2017, which team were you working in?
A. I would have been looking after the evidence recovery team at that time.

Q. You see there "PMB". I assume that's Ms Brisotto?
A. Yes.

Q.

Staffing levels significantly reduced due to long term leave. Resourcing to this team is being looked into.

A. Mmm-hmm.

Q. So you well understood at that point that there were staffing issues with the evidence recovery team?
A. I actually don't really remember what that relates to. I must have had some staff going off on some long-term leave and I must have requested to get more staff, I can

only assume.

Q. Can I ask you about the process of micro-concentration?
A. Sure.

Q. I think we understand that the normal elution process is highly automated?
A. Yes.

Q. Is the quant process also automated?
A. Yes.

Q. What about the micro-concentration process - does that involve manual intervention?
A. Yes, it's a tube-by-tube process.

Q. So it slows the procedure down significantly?
A. Slows what procedure down?

Q. Well, the process of testing.
A. Oh, well, it's a more labour-intensive test. I mean, it - it has an impact. Depending on how many you're doing and how often you have to do them, that might have more of an impact, but it's not a procedure done by the evidence recovery team.

Q. It's not. All right.
A. It's done by the --

Q. By the analytical team. All right. Are there issues with staff suffering repetitive strain injuries and that sort of thing from doing micro-concentration, to your knowledge?
A. Yes, so when I managed the analytical team and I had staff that were performing micro-concentration using the microcon filters, we didn't do large batches of them, so I never had issues. But I have heard secondhand that maybe if you're doing a lot of them, you're increasing the amount of pipetting. Pipetting is where you're drawing liquid up and down, and it has a very, you know, repetitive --

Q. You're indicating pushing up and down with your thumb.
A. Yes, it's a repetitive process that might, I would imagine - if not - you know, you could manage, I guess, staff rotation and stuff like that to try and manage that.

Q. Now, can I ask you about Project #184?
A. Yes, you can ask me about Project #184.

Q. You know what I'm talking about when I say Project #184?
A. Yes, yes.

Q. There were a number of stages to that project, were there not? There was the development of a project plan?
A. That's the usual thing when we do projects, yes.

Q. Do you recall seeing the project plan for Project #184?
A. Yes - well, I don't sort of recall. I know that I've looked back through the records and seen that I did.

Q. Let's have a look, please, at [FSS.0001.0001.0862]. Do you see the front page of that document?
A. Yes.

Q. Do you recognise that?
A. I can see it's a project plan. I mean, yes, I --

Q. Well, do you see it's a project plan for Project #184?
A. Yes, and as a member of the management team, I'm assuming I read it and I probably even had to complete a risk assessment at the bottom, second page.

Q. I'm going to come to that risk assessment in a moment. Can we start with what we see at the bottom paragraph that's currently visible, where it talks about:

> *... extracts with low Quantification values were recommended to be concentrated. Templates of [lower than] 0.132ng were found to exhibit marked stochastic effects after amplification.*

A. Yes.

Q. How does 0.132 nanograms convert to nanograms per microlitre in terms of the standard elution values?
A. Well, it's - so the 0.132 nanograms relates to the fact that we use - in the PowerPlex 21 amplification kit, you have to put 15 microlitres of sample into that reaction. Okay? So regardless of whatever concentration your sample is, 15 microlitres needs to go in. So if you

only have 5 microlitres of sample, you need to add 5 microlitres of sample plus 10 microlitres of diluent, et cetera. So 15 - 0.132 divided by 15 gives you your 0.0088 ng/µL, so 0.0088 ng/µL times 15 microlitres equals 0.132 nanograms.

Q. So you understood that to mean that when samples were processed, samples that had less than 0.0088 ng/µL of DNA, without being micro-concentrated --
A. Yes, just straight-up first result.

Q. -- exhibited marked stochastic effects; correct?
A. Well, you could still have that effect after micro-concentration. Right? That's just the - so samples where the total DNA template input into your amplification reaction were less than 0.132 nanograms, we would see marked stochastic effects.

Q. Okay. Can we go, please, at the bottom of page 2, to the "Expected Outcome". Do you see that there on the page:

> *It is expected that the data ... will match the anecdotal information from case managers which has been gathered from years of experience.*

A. Yes, so generally speaking, if people are thinking that they see, you know, more or less of something, or whatever, you would expect that if you go and look at a broader dataset, you would probably see something similar to what people are reporting anecdotally. But it doesn't necessarily follow. That's why you need to go and look at the broader dataset.

Q. It's not a very scientific way to approach it, is it, to simply posit the expected outcome of the project in that way - that is, this is what you expect the data to show?
A. Well, it's a project proposal, right, so you have to have an --

Q. My question to you is whether it's consistent with a scientific approach to identify at the outset what you expect the outcome to be?
A. Well, we don't run a pure research facility. So we don't just do testing on things where we have no idea what the answer is going to be. We would only do testing on where we have some sort of expected outcome in order for

the management team to effectively determine whether that project should go ahead or not.

Q. But surely you would accept this proposition, that that suggests from the outset a bias in the approach - that is, that you expect the outcome to be a particular one, that is, that the data will accord with the anecdotal information you've received?
A. No, because if the data had actually shown us something different, we would have done something different.

Q. We will come to what the data showed in a minute. Can we scroll down, then, to the "Risk Assessment" which is on page 3. So you were in charge of the evidence recovery team at that stage?
A. Yes.

Q. Did you contribute to this risk assessment?
A. I would say I wrote that, yes.

Q. That's your cipher on the right-hand side with the date underneath it?
A. Yes, that's my initials and the date, yes.

Q. What sort of risks were you considering?
A. It was really my role in the evidence recovery team to look at whether this process would impact upon the evidence recovery team, and, as we've discussed, there really wouldn't be any impacts on the evidence recovery team as such.

Q. Well, what do you mean by impacting on the team? Do you mean the people who actually physically worked in the --
A. Well, our evidence recovery processes, our evidence recovery tasks, the people themselves - all of those things, anything that might have an impact upon the evidence recovery team.

Q. As the name implies, the task of the evidence recovery team was the recovery of evidence; correct?
A. It's a catch-all term to refer to basically sampling, and sampling exhibits.

Q. The idea being, though, that you were attempting to recover evidence in criminal cases that were being

investigated by the QPS?
A. By that rationale, every team is an evidence recovery team.

Q. Well, no, wasn't your job to ensure that as far as possible, as far as practical, available evidence was identified so that it could be analysed by other scientists?
A. Our role was to do the sampling. That's what the evidence recovery team was.

Q. But you're sampling so as to recover evidence, aren't you?
A. Sampling so as to potentially find any DNA that's present on an exhibit, yes.

Q. Which would be then evidence?
A. Well, yes, but that's no different to, as a reporting scientist, trying to interpret a DNA profile in the process of evidence recovery.

Q. But it's not even going to get to a reporting scientist if you don't recover it, though, is it?
A. In the same way that police need to send us the exhibits.

Q. What I'm wondering, though, is whether you considered the broader risks of --

THE COMMISSIONER: Q. Is the answer, yes, that if you don't recover the DNA, then it won't even get to the reporters?
A. I guess so, yes. I mean, yes, if you don't sample it correctly.

MR HUNTER: Q. Did you consider the wider risks of what was being proposed?
A. Not really, because my main focus was - as the manager of the evidence recovery team, was to - are there risks in this project proceeding, and it's really about the project proceeding - proceeding to the evidence - is there any risk to the evidence recovery team?

Q. Did you not consider that there might be risks to the recovery of evidence?
A. I identified there that there may be some risks associated to samples not getting results.

Q. But they're offset by process efficiency so that the results should be more timely - yes?
A. I think that's fairly critical, that we get results out in a more timely manner.

Q. So it doesn't matter if you miss some evidence?
A. No. That's not what I'm saying at all.

Q. Well, that's the inevitable consequence of what was being proposed, isn't it?
A. It's just the broader practicalities of working in, you know, a scenario where we can't - it's not practical to sample everything at a crime scene. It's not practical to do everything to the nth degree.

Q. No-one's --
A. So it's just in that broader --

THE COMMISSIONER: Q. Wait a minute. You're not being asked about the crime scene.
A. Sorry, yes. Sorry, my apologies. I'm just thinking, you know, in the broader sort of context that it seems --

Q. What broader - what's the context?
A. The broader context of a laboratory trying to carry out its functions, that it's my understanding at my very junior level of management that you just don't have the resources to do everything and spend, you know, all the time in the world on everything that you can think about.

Q. Well, you are not being asked to do - it doesn't assist me in working out what's happening here --
A. Okay.

Q. -- if you speak in terms of doing everything in the world as though that's an impossibility. What you're being asked about is whether the lab is doing what it ought to be doing.
A. Okay.

Q. Now, if you concentrate upon the task in front of you in the lab and the questions being asked, it will assist me in understanding your position.
A. Okay. So my position at that time was, as the evidence recovery senior scientist, does this project impact upon the sampling of exhibits? And, no.

Q. Well, how can that be right, when what you are being asked to approve is an experiment that might lead to samples not being tested that might yield results? Why is there no impact upon the evidence recovery team? Its work would be impeded because it wouldn't be doing work on some samples that might yield DNA for analysis.
A. Because all the sampling is done prior to DNA quantification. So the task that the evidence recovery team would be carrying out would be exactly the same regardless of whether there is a DNA insufficient process or not.

Q. Don't you put samples into the Genetic Analyzer; is that part of --
A. Not the evidence recovery.

Q. I'm sorry, you're talking about the evidence recovery team.
A. Yes, I am.

THE COMMISSIONER: Go on. Yes, Mr Hunter. Mr McNevin is distinguishing between his role in recovering the evidence, which is then taken by others for quantitation and submission to the Genetic Analyzer, and if it's determined that some samples with a quant below a particular figure are not to be progressed beyond quantitation, that involves steps beyond the role of the evidence recovery team.

MR HUNTER: I understand that.

THE COMMISSIONER: Q. Is that what you are saying?
A. Yes.

MR HUNTER: Q. Nonetheless, you were in favour, weren't you, of some sort of triaging process coming into play to reduce the number of samples that were subject to microcon, weren't you?
A. I was more just thinking on a broader context of us doing the best work we can on the sort of samples that give us the most amount of information.

Q. I'll ask you the question again. You were in favour, weren't you, of adopting an approach that resulted in fewer samples being subject to micro-concentration?
A. Well, I suppose ultimately that was the process in question, but it wasn't specifically about microcon; it

wasn't specifically about reducing the number of samples that go to microcon. It was just about whether we could be a more efficient laboratory.

Q. One way you saw it being more efficient was by not testing low-quant samples?
A. I don't believe it was just about not testing them straight up. It was about - sorry, about testing - not testing them straight up but having the ability, therefore, for them to be tested at a later date if they were seen to be important.

Q. But that's what happened, isn't it, that they simply would not get tested if they were quantitated in that DIFP range?
A. Unless we were asked to do further testing by Queensland Police.

Q. Can we go, please, to an email that you sent - and perhaps before we go to it, do you recall that there was a project paper prepared by Mr Howes and circulated for feedback?
A. Initial sort of report as part of this project, yes.

Q. And you provided feedback to him --
A. Yes.

Q. -- on more than one occasion?
A. Probably. I can't quite remember exactly, but I do remember giving some feedback, yes.

Q. I'm suggesting to you that you provided some feedback to him on 5 December. Mr Woolridge, could we please have [WIT.0040.0005.0001]. Could we scroll down the page to where we have "Figure 1" and "Figure 2".
A. Mmm-hmm.

Q. Perhaps if we could just enlarge those two, the "Figure 1" with the emoji after it and "Figure 2" with the emoji, please. So do you agree with me that "Figure 1", you have an unhappy face emoji?
A. A sad face.

Q. "Figure 2", you have a happy face emoji?
A. I can only remember, I think that was a bit of an internal joke, that "Figure 1" might have been a pie chart, and I don't particularly like pie charts.

Q. Well, you agree with me that those emojis mean you liked one and didn't like the other?
A. Like I said, if I remember it correctly, it was just an indication that - it was a bit of a joke with Justin, because it was a running joke in the management team that I didn't particularly like pie charts as a way to represent data.

Q. Could we go, please, to [FSS.0001.0001.0834] and go to page 10, please.
A. It is a pie chart.

Q. That's the pie chart that you didn't like?
A. Well, it was just a general joke about the fact that I'm not a big fan of pie charts as a way to represent data.

Q. Well, that pie chart, though, identified that the success rate for auto-microcon samples was 10.6 per cent?
A. Yes.

Q. You thought, what, that this was an unhelpful way of presenting the data?
A. No, it's not what I was actually trying to say, because I understand that pie charts - when there's a limited number of data points, for example, there's just an A or B data point here, they are not a bad way to present the data. It was, like I said, more of an internal joke between Justin and I that --

Q. Because you understand that within this paper, "Success" and "Fail" were clearly defined at the outset; correct?
A. From memory, I think it is, where it's talking about a DNA profile that's able to be interpreted and one that's not - is that correct?

Q. Yes. So in that sense, it is a binary concept - you have got something that either succeeds or it fails?
A. It's able to - yes.

Q. So a pie chart in this instance is a pretty good way of representing simple data like that, isn't it?
A. Yes, it wasn't something where I was saying to Justin, "You can't have that as a pie chart." Like I said, it was a little internal joke about the fact that "Al doesn't like pie charts."

Q. Okay. Well, if we go down the page to the next page, please, this is figure 2. You liked that one, though; is that right?
A. It's not a pie chart. That was the joke. It was just a little joke to Justin that I don't like pie charts, and one's a pie chart and one's not.

Q. Do you think that figure 2 is a better representation of the data that the study identified?
A. I guess it does provide a bit more information. It's a little hard to read, to be honest, there's a lot of extra decimal points, and the significant figures there are quite large. It is a little hard to read.

Q. Do you agree that as a dataset, it's likely to be skewed fairly heavily towards the lower-quant samples because of the higher numbers of examples in those various quant categories?
A. Depends on how you're reading it. I think there's a reasonably - a reasonably visual approach there, where you can see that the blue lines are a lot smaller than the red lines at one end of the chart, and they get closer together in their height as you go towards the top of the chart.

Q. Certainly an untrained person looking at that would look at it and see that there's a lot of red and not much blue?
A. At the bottom. And then further up the top, there's more blue and less red. Yes, that's why I think it's a little bit more visual.

Q. Now, this paper, or the draft version of it - were you aware of any controversy amongst the scientists at the laboratory about it?
A. I mean, obviously since, I have become aware that there has been a lot --

Q. I'm talking about at the time.
A. At the time, I can't really remember it being something that was a big controversy, no. I mean, again, we're talking something that was sort of about five years ago, and there's lots of things going on at the laboratory. We've already talked about the sperm microscopy, which was around that same time. Lots of things happening. I can't remember exactly what was a big controversy or not. Put it

this way, it didn't stick out in my mind.

Q. One thing, though, is quite clear, that what was being proposed by this draft paper was that micro-concentration in respect of low-quant samples would cease when it came to P2 samples?
A. I think so, yes.

Q. But not P1?
A. I'd have to go back and read it again. Does it say that specifically?

Q. Well, let's go, then, to another document. Just bear with me a moment, please. Could we go, please, to [WIT.0040.0007.0001]. That's exhibit 5 to your statement.
A. Mmm-hmm.

Q. These are the minutes of a meeting. Do you see you are an apology?
A. Okay.

Q. But we see at 5.7 on page 2, there is reference there to an options paper being drafted for priority 2 samples.
A. Yes.

Q. Am I right that that's how you understood it - that what was going to happen was that it would be priority 2 samples where micro-concentration would stop?
A. I assume so. If you think of it in a way that if it's an efficiency measure where we don't process the sample automatically, then QPS give us information to process if it's important. Obviously the P1s are more important, so it would be less efficient to then ask for them to give us information and ask them to do it again, so it would be just more efficient to do it straightaway.

Q. Perhaps if we go back to [FSS.0001.0001.0834] at page 20, do you see at the top of the page:

Based on the data analysis, the following recommendations are offered:

1. Cease 'auto-microcon' processing with the following exceptions:
a. Priority 1 samples ...

A. Yes.

Q. So what I'm getting at is, it was never your understanding that what was being proposed, and indeed what was implemented, applied to P1 samples?
A. I can't remember what my understanding was at the time, but that would appear what all the paperwork suggests, yes.

THE COMMISSIONER: Q. You are not aware of any document that would have caused you, at the time, to think that this was a process that was being suggested across the whole range of samples, including P1, having regard to the documents that you have been shown by Mr Hunter and having regard to the status of P1 samples as something to which --
A. Yes, I don't really recall it being something about P1 samples, no. That's just my memory.

MR HUNTER: Q. It would make no sense in the case of P1 samples, would it?
A. I guess not, unless they're talking about - oh, it depends on what sort of processes are in place across - they're monitoring the results and giving us feedback. But generally speaking, I would say that, yes, it would be more efficient to just take them all and work them all straightaway.

Q. Anyway, we know that up until early 2018, the process was that for P1 and P2 samples, they were all auto-microconned?
A. Okay.

Q. You understood that, didn't you?
A. Yes, I'm not sure of the dates, that's all. Sorry, when you say "early 2018" --

Q. Let's assume for present purposes that the Options Paper, as it has become known, was presented to police in early 2018.
A. Okay, right.

Q. Prior to that point, samples in the low-quant range --
A. Were auto-microconned.

Q. -- were auto-microconned?
A. Automatically put through the microcon process, yes.

Q. They were never amplified without first being

micro-concentrated?
A. I don't think so. I'm not quite sure whether auto-microcon was something we did straightaway after we implemented PowerPlex 21 or whether it was something we brought on subsequently. I can't remember.

Q. Certainly immediately prior to 2018 --
A. Yes, immediately prior.

Q. -- there was never a situation where low-quant samples were amped without first being micro-concentrated?
A. Yes.

Q. There were procedures, standard operating procedures, that documented all of this; correct?
A. I assume so, yes.

Q. In terms of micro-concentration, though, there were different approaches in terms of the extent to which a particular sample would be concentrated?
A. Yes, we've got our - we've already talked about the 35 and 15 elsewhere in evidence, I believe.

Q. But sometimes scientists would ask that a particular sample be micro-concentrated to full?
A. Yes.

Q. And there was a standard operating procedure for that, too, wasn't there?
A. Well, it was kind of the same - part of that whole - the standard operating procedure for microcon, as far as I understand, was that that the analytical scientists would look at the notes, and if there was - I think to 35 was the default, and so if there was no notes, you would microcon to 35, but if there was a request to microcon to full, you would microcon it down to a level which could - sometimes it wasn't - in the actual physical nature of doing it, the sample just won't concentrate down lower than something more than that.

Q. But my point is that micro-concentration to full was something that had been happening for some years prior to 2018, hadn't it?
A. As far as I was aware, it was an option all the way from when I very first started at FSS.

Q. When was that?

A. 2004.

Q. Can I ask you, then, about the decision in June of this year, particularly on 6 June - are you aware of the decision I'm talking about, about how to change the workflow with respect to the DIFP?
A. Is this following some DG memo?

Q. Yes.
A. Yes, okay.

Q. That there was a decision made that all samples in the DIFP quant range would be sent directly for amplification?
A. Yes.

Q. You recall seeing that?
A. I remember that.

Q. You remember seeing a memo going around?
A. Yes, yes.

Q. What section were you working in at that time?
A. This year? I was a reporting scientist.

Q. Did it strike you as an odd decision to make, to amp these low-quant samples without first micro-concentrating them?
A. A little bit, yes, but I thought that the department was - it seemed to me that they were working off some wording of what the director-general had said. I can't really remember. I just remember, "Okay, this is the new rule. Okay, I'll work under this paradigm now."

Q. You knew, though, that prior to 2018, it had been identified that amping these low-quant samples without micro-concentrating them simply led to marked stochastic results?
A. Yes.

Q. Did it occur to you in June of this year, when you saw what was being proposed, that that process was likely to be a complete waste of time?
A. I wouldn't agree with that because - yes, I just - I wouldn't agree with that.

Q. You wouldn't agree with it?
A. No.

Q. What was it likely to achieve?
A. Well, you can get an indication from the profile, when it is amped, as to whether it might be better to microcon it to 35 or microcon it to full, because you have an indication of what's in that.

Q. But doing that potentially wastes 15 microlitres of the sample, doesn't it?
A. Well, it's not a waste if you get some information from it.

Q. Well, do you agree with me that amping a low-quant sample in the DIFP range without first micro-concentrating it was likely to lead to a result that was forensically useless?
A. Yes.

THE COMMISSIONER: Q. Nobody is trying to put responsibility on you in any way for this process. What's being asked for is your expert opinion about the process and what you think about its efficiency or lack of efficiency. That's what Mr Hunter is after.
A. Yes, sorry if I sound a little vague, because I think there's a little bit of nuance there that's not really being discussed.

MR HUNTER: Q. What I'm putting to you is that what was proposed in June of this year with respect to samples in this range was completely different from how they had been treated immediately prior to the start of 2018?
A. I'd agree with that, yes.

Q. Can I get you to explain, please, what useful result you think might come from proceeding to directly amplify a low-quant sample?
A. So if you got indications that there's a very large number of contributors - and it doesn't matter if you're going to concentrate it, as soon as you get more than four contributors in a mixture, you know that you can't interpret that because we haven't validated to interpret those higher-order mixtures beyond four people. So if you get something that straight up you can see that it's a very complex mixture, there's no point concentrating, because you're not going to be able to interpret it. So that's one example, and --

Q. Just pausing there.
A. Sure.

Q. How do you know whether what you are seeing is in fact a number of contributors or merely an example of the stochastic effects?
A. Okay, so, yes, when you've got - so I think you've probably already heard evidence about how you interpret pieces of information from both parents, and you get one copy from your father and one from your mother, so you would expect to see no more than two pieces of information at a particular locus when you have a single-source profile, no more than four if you have a two-person mixture. So therefore if you see nine peaks, it has to be at least five people.

Q. Unless the peaks are a result of the stochastic effects about which we have been discussing?
A. But if you've got nine peaks that appear to be allelic, it's a five-person mixture at least, regardless of whether the stochastic effects are there or not. So there's like a number of peaks above which - so, you know, if you have eight peaks which appear to be allelic, you may have four, but you might have five. If you have only got six, you might have three people, but you might have four or you might have five, so you need more information across the profile. But as soon as you see enough to make five people, you know that there's at least five people in that mixture.

THE COMMISSIONER: Q. But you don't know any of that when you get your quant, which is a low quant; all you know is you have a low quant?
A. That's what I'm saying about when you get it amplified straight up. When I said that by amplifying it straight up, do you necessarily - is it a waste of time? Not necessarily, if you get some useable information from that profile.

Q. Yes, if you do, but --
A. If you don't.

Q. -- if you don't, what do you do?
A. Well, then you would need to micro-concentration.

Q. That's right, so why don't you take that step in the first instance?

A. Oh, I'm not saying that it's the most efficient way of doing it, but I don't say it's a complete waste of time, is what I'm saying.

Q. I understand. Which is the more efficient way of doing it, do you think?
A. Oh, I think the auto-microcon.

MR HUNTER: Q. Can you tell us about any other advantage of directly amplifying low-quant samples?
A. Sometimes, from what I can recall, you might see that it's a very clear single-source profile matching the person the sample has been taken from, and so you see that that profile is going to match the person that the sample has been taken from.

Q. The likelihood of that is surely pretty low, getting a clear single-source profile?
A. Depends on the source. If it's taken from a sample that's been taken from an intimate site on someone, then it's highly you'll get a profile matching the person that you're sampling.

Q. So if it's possible, and you think this is an advantage of amplifying these samples directly - that is, that you might get a single-source profile?
A. I didn't believe I said it was an advantage.

Q. Well, I asked you whether there was any other advantage of directly amplifying these low-quant samples, and you told me that you might get a single-source profile.
A. My apologies, I didn't mean it was an advantage over the alternative of the microcon process, but there is some utility in it. I was meaning that it wasn't a complete waste of time.

Q. Because if there was some utility in it, you understand that under the DIFP regime that applied prior to June of this year, you wouldn't even have the opportunity of getting this rare single-source profile, because the DIFP samples wouldn't get tested at all, would they?
A. Correct. Well, unless we were requested to do so.

Q. Lastly, in connection with the reporting of these directly amplified low-quant samples, let's say you get a complex mixture that's incapable of being interpreted --
A. Mmm.

Q. -- or you get stochastic effects or whatever, something that is effectively meaningless insofar as the police are concerned. The police would still get a reported result, though, wouldn't they?
A. Yes, yes, yes.

Q. The way these samples would get reported on the forensic-register would be different from the way they would previously have been reported for DIFP?
A. Yes, so previously they would get a line that says "DNA insufficient for processing", and then if we amplified it and we had some sort of profile result, we don't provide them with that result - sorry, I might need a drink of water - we would report them with a result line that reflects the DNA profile we were getting.

Q. That's right, but what I'm getting at is under the DIFP regime, at least there would be clearly set out in the forensic-register the prospect that the sample could be further tested by way of micro-concentration or pooling or whatever?
A. That's my understanding, yes.

Q. But post 6 June, the report to the police would suggest, "Well, this is it. This is what we have done, and this is the result"?
A. I would think so. I mean, I'm not sure --

Q. So there would have been nothing to suggest to the police, "Look, there's potentially 75ml or so, maybe 85ml, of sample left over. We might be able to micro-concentrate that and perhaps get a result" - there was nothing that suggested that to them?
A. I don't believe there's anything in the forensic-register that suggests that.

Q. Could we please go back to your email of 5 December 2017, which is [WIT.0040.0005.0001].

THE COMMISSIONER: What's the date of that?

MR HUNTER: 5 December 2017.

Q. Can we go, please, to the bottom of the page where the word "Recommendation 2" appears. When you say you'd "support up to 0.02 ng/µL" --

A. Yes.

Q. -- what were you saying there?
A. Look, I can't remember exactly, but it looked to me that I was thinking that there must - I must have been looking at some sort of data and thought it was a point where I was happy that samples below that were more likely or less likely to provide some utility. I go on to say that, you know, "still give QPS an option to ask for more work on the sample". I think I was of the understanding that there would be quite a decent dialogue between the lab and QPS about what gets further worked and what doesn't.

Q. So your "Recommendation 2" - and I can put it up on the screen if you need to see it --
A. Yes.

Q. -- but what I'm suggesting to you it says is:

Cease processing all Priority 3 samples up to the Quantification value of 0.0133 ng/µL ...

Right?
A. Okay.

Q. In your email, you said you would support up to 0.02?
A. Okay.

Q. So you were suggesting that it was worthwhile abandoning the testing of even more P3 samples than the option paper was recommending; correct?
A. I think I - yes, I was just saying that if they wanted to go higher, I would support that. I can't really remember - I can't remember exactly my exact thoughts around that at the time, but maybe - maybe there was some data I saw that showed that 0.0 - sorry, what was that other number, 0.0133 or something?

Q. 0.0133.
A. Yes. So maybe I saw that there wasn't much difference in the data between 0.0133 and 0.02 or something. I can't actually remember that data.

MR HUNTER: Those are my questions, thank you.

THE COMMISSIONER: Mr Rice?

MR RICE: No, thank you.

<EXAMINATION BY MR HICKEY:

MR HICKEY: Q. Mr McNevin, the Commissioner received some evidence from Dr Moeller to the effect that she had observed you being belittled by Ms Allen. Is that something that you have any personal recollection of?
A. No.

MR HICKEY: Thank you. Those are the questions, Commissioner.

THE COMMISSIONER: Q. I just wondered whether you could help me with a couple of things, Mr McNevin.
A. Yes.

Q. On this business of the cleaning change that was instituted, I think you mentioned that you looked at Project #148, a project in relation to optimising the cleaning protocol for bone crusher vials. Did you say that?
A. Yes, yes.

Q. Could document [WIT.0003.0456.0001 at 0007] be put on the screen. Your colleagues who wrote this report were concerned with working out a protocol for washing vials that are used in the testing of bone samples?
A. Yes, these special little tubey things.

Q. Yes, yes. So in order to work out how they were to be cleaned, we see in the second paragraph, on the third line:

> *The purpose of this "Equipment Control" is to show that the crushing vial is free from contaminating DNA.*

So the purpose of the cleaning is to get rid of any DNA samples that might have been there before and so that the vial is clean of DNA for the next testing process; correct?
A. Yes, I think that was like a historical process that maybe some time in the past they had had some issues, and so they had implemented this use of an equipment control. I'm not really sure how --

Q. So the purpose is to find out what kind of a washing

of the vials will ensure that when the vial is reused, it doesn't have any DNA in it?
A. Yes, so I think they collected those - if I remember correctly, they would collect that before they used the piece of equipment.

Q. Yes, so you see in paragraph 3:

To have confidence in our results ... we investigated alternative cleaning protocols to try to ensure that the amount of contaminating DNA ... was sufficiently reduced.

A. Yes.

Q. If we look at the second-last paragraph:

Any suitable cleaning protocol must not damage the stainless steel components of the crushing vials by causing rusting or pitting.

A. Yes.

Q. Now, what cleaning substances in the lab might have that effect?
A. Generally speaking, I think bleach is the most corrosive sort of chemical, I believe, that we use, yes.

Q. Then if you could put up on the screen [WIT.0003.0456.0001 at 0016]. Now, if you look at the bar chart there, just familiarise yourself with it?
A. Mmm-hmm.

Q. That, as I understand it - and you can look at more of the document if you want - assumes that there are 40 alleles in the samples that they are using, because they are test samples, and they have cleaned a vial that has been swabbed with DNA-containing sample, and they cleaned it with water, Tergazyme, Decon 90, TriGene and dishwasher "Special", which is the dishwasher using the substances --
A. The cycle it uses.

Q. Yes. They found that Tergazyme is pretty good; the dishwasher "Special" is also good, in that after washing, you have close to zero alleles in it?

A. Mmm-hmm.

Q. And TriGene is worse than water, because almost all of the alleles are still there?
A. Sort of, in that Nanopure Water had a broader spread. Potentially it looks like that chart is trying to show that there was more than 40 from some of the Nanopure Waters --

Q. But TriGene is not very good, so it seems. If we go to the paragraph below the graph --
A. It's actually kind of an odd finding.

Q. Perhaps, but it's a finding, so we are stuck with it. If you look at the paragraph below, the second sentence:

> *Because of this result TriGene Advance was considered not suitable for cleaning bone vials ...*

A. Mmm-hmm.

Q. Then if we go, please, in the same document, to page 0019, in the large second paragraph at the end, that is the conclusion that is drawn, that TriGene shouldn't be used?
A. For the cleaning of the bone vials, yes.

Q. Because it didn't decontaminate effectively; am I understanding it correctly?
A. Yes, because they were using dried saliva stains.

Q. Then if you go in the same document to page .0020, the recommendation in the middle is that the Miele dishwasher with its special cycle is the best method, and Tergazyme can be a viable backup?
A. Mmm-hmm.

Q. Now, is there a reason why using the Miele machine wasn't appropriate for the bone instruments with which you were concerned?
A. You mean something other than the crusher vials?

Q. Yes, yes.
A. Yes. Sorry, yes.

Q. You changed the cleaning system, as I understand it, for bone equipment from whatever it had been, using

Tergazyme, to a different set of substances for cleaning?
A. Yes.

Q. What I'm asking you is, was there any reason why the dishwasher system that is referred to in paragraph 6 was not suitable?
A. It's probably just that it didn't occur to me, because I hadn't really thought about that, that we had - this validation just referred to bone crusher vials, so I was going to use the protocol that had been laid out in this validation for bone crusher vials, and then I guess it probably didn't occur to me that that may also be suitable for other pieces of equipment. I guess it might have been something as simple as that.

Q. Then if we go, please, to document [WIT.0003.0457.0001], that's the change management register entry?
A. Yes.

Q. Just help me with this, if you wouldn't mind:

Change in bone processing equipment
cleaning protocol:
Cleaning of the bone crushing equipment
using the dishwasher as per Proposal #148;
Use bleach and/or TriGene, followed by ...
[alcohol].

A. Mmm-hmm.

Q. Now, what's the purpose of the alcohol - is it to remove the bleach or TriGene?
A. Sort of, yes. It's also - I would have to go back, but I seem to remember some time previous reading some journal articles where it's not just the chemical action of the cleaning agent that reduces the presence of DNA but also the mechanical action of the wiping it away. So you have your twofold chemical action, followed by wiping down with your bleach and ethanol - sorry, your 70 per cent ethanol.

Q. Now, the bone crushing equipment we're considering, can you tell me what that is?
A. That's your vials, the impactor, the cylinder and the bungs, so you have --

Q. What are the bungs made of?
A. I believe they're a rubber-type material. I think they are, because the impactor is a metal piece that slides - so you have a tube, and the tube - you have a bung on each end and a bit of metal tube - sorry, a metal cylinder that sits inside that tube, and so then you have your pieces of bone that are being exposed to liquid nitrogen, so they're quite brittle. We all know the experiments. And so then the machine shakes that vial, and the bit of metal inside bangs around and crushes up the bone. So I believe that those bungs are rubber, but I couldn't be certain.

Q. It uses a familiar device - you get a cylinder and you get a steel ball, or a ball made of something, glass or something, and you put a hard object inside with the thing you want to crush, and you shake it --
A. Yes, basically.

Q. -- and the thing inside breaks it into pieces; is that right?
A. Yes, yes.

Q. And the thing inside that's breaking it into pieces, what's that made of?
A. I think that's the impactor, I think that's the stainless steel bit.

Q. Then what else do they use in the bone crushing equipment line?
A. Well, that's - oh, there's the actual liquid - the actual crusher itself, the instrument that you pour the liquid nitrogen in, that that little vial goes in that shakes the living daylights out of it.

Q. Do you clean that after use?
A. Look, I'm not actually sure, but my expectation is that my staff would certainly be wiping down the outside of it.

Q. What about the chisels and all of that?
A. I would imagine all of that - that's - I think I would have referred to that as sampling equipment, because that's what you do prior to doing the crushing.

Q. So were you changing the cleaning protocol for that equipment as well?

A. I do believe so. I can't remember. There's an email there that has already been tendered in evidence, I think, that outlines what I was actually changing.

THE COMMISSIONER: Ms Hedge, the email - I don't have the number of it, but it is dated 21 June 2019, from Mr McNevin to the management team, and you referred to it I think during Ms Keller's evidence.

MS HEDGE: Yes, I do have that. [FSS.0001.0056.8821].

THE WITNESS: I think that's the bone processing equipment. It's the broad picture of the bone crusher plus the sampling bits.

MS HEDGE: Just check that's the right one, Commissioner. Is that the email that's on the screen now?

THE WITNESS: Yes, I think that's where I stepped out what the changes were.

THE COMMISSIONER: Q. Why don't you read it, Mr McNevin, and I will read it as well.
A. Yes, so that's where I'm stepping out what changes I'm looking to use. I think in the second-bottom paragraph from the bottom of the page there:

> *Therefore I am proposing that we eliminate the use of Tergazyme ...[to do the following things] ...*

Q. At the bottom of that email, in the second-last paragraph, you propose that:

> *... we eliminate the use of Tergazyme ...*

A. Mmm-hmm.

Q. And we know why that was so. And:

> *- Implement the cleaning of the bone crushing equipment using the dishwasher ...*

A. Mmm-hmm.

Q.

> *- Use bleach and/or TriGene ...*

A. Yes.

Q. Isn't that - bleach, as a rust causer, and TriGene, as something that fails to eliminate DNA - something that Project #148 said you shouldn't use?
A. Well, only in the specific instance of the testing that was done on those bone crushing vials. If you look at Project #153, we'd decided that TriGene was quite useful, and I think there is a lot of literature to show that TriGene is actually quite a good cleaning agent.

Q. Sorry, let's just take it a step at a time.
A. Sure.

Q. Here you are proposing the cleaning of vials, you said a moment ago? You told me that a moment ago?
A. Yes, the bone - there's two steps there. There is the cleaning of the vials and the cleaning of the sampling equipment, so overall the bone processing.

Q. Yes.
A. Yes.

Q. So why would you be using something to clean the vials that Project #148 said shouldn't be used to clean the vials?
A. Sorry, I believe that that's what that line, "Implement the cleaning of bone crushing equipment using the dishwasher", refers to the vials.

Q. As per what - proposal 148?
A. 148, yes.

Q. But proposal 148 expressly said, "Don't use something that causes rust, and we don't recommend TriGene"; do you remember that?
A. Yes. So I'm a bit unclear on your question, Commissioner.

Q. You recommended eliminating Tergazyme, for good reason.
A. Yes.

Q. And instead, implementing the cleaning of the bone crushing equipment, as per proposal 148, using bleach and TriGene?

A. No, sorry, I beg to differ.

Q. No, well, tell me what it means. I might be wrong.
A. So two different points there. The first point, the first dash:

> *Implement the cleaning of the bone crushing equipment using the dishwasher as per Proposal #148.*

Q. Yes.
A. Then everything else, other than the bone crushing equipment, clean using these alternative protocols.

Q. Right. And what is "everything else"?
A. Well, you know, the bench, the - all the bits and goods and chattels that you use, you know, whether it was chisels or hammers or forceps.

Q. That's right. That's what I'm talking about. So the reason TriGene was not recommended was that it was not effective in removing DNA.
A. From the bone crushing vials under that specific test that was done for the bone crushing vials. There is plenty of other literature, including Project #153, that says that TriGene is actually useful.

Q. I see so if we look at proposal 153, we find support for its use in cleaning - and bleach, I gather --
A. Yes.

Q. -- in cleaning metal tools?
A. It's - well, it was used, I believe that Project #153 was about cleaning blood away from - we used a Petri dish. I don't think the actual surface was tested, per se, it was more --

Q. What I'm concerned about is this, and I don't know the answer, I'm hoping you can help me: Project #148 concluded, at page 18, that TriGene Advance was not considered suitable for cleaning the bone vials, and that's because it failed to clean off the DNA.
A. Yes. And that's - I think it posits in that report because it was - they were using saliva as the source of the DNA. So one of the issues here is that we weren't crushing bone and testing the ability of equipment to clean DNA from bone off the equipment. Because --

Q. I see. I'm sorry. I had missed that. You're saying that TriGene --
A. Whereas Project #153 was cleaning blood.

Q. TriGene might be useful for getting rid of any trace of alleles if the DNA was deposited by means of whatever is in bone?
A. It could be, yes, and so Project #153 --

Q. Could be, but where does one get that?
A. Well, I think that's part of your problem, is that the sampling of bone and bone samples are a little bit hard to come by. You know, you don't go sampling a large number of bone samples.

Q. I'm still troubled by this, that I have a report in front of me that says that TriGene Advance was not considered suitable for cleaning the bone vials, and that's because we see from the bar graph that the test they did showed that it didn't tend to get rid of the DNA?
A. Didn't get rid of the DNA, yes.

Q. These are bone vials we're talking about, not saliva tests but bone vials?
A. But the bone vials were impregnated with saliva as part of the test.

Q. I know. So are you saying that the test was flawed, then, that they used the wrong substance; they should have used bone?
A. It is a limitation of the testing.

Q. I see. That's your opinion. Does it appear anywhere in the report?
A. I don't believe so. I think - oh, actually, there is a part of the discussion. Doesn't the discussion cover about saliva and proteins or something?

Q. What we might do is adjourn, and I would invite you overnight, please, to read Project #148 and the other one that was referred to in the --
A. 153.

Q. What?
A. 153, I think.

Q. Because I don't understand it at the moment, because it appears to me that bone crushing equipment was to be cleaned in a particular way but expressly not with TriGene, and not with anything that causes rust, but the new protocol for the cleaning of bone equipment, bone crushing equipment, including metal objects, was to use those substances. Now, having regard to the tenor of what you are saying to me, my view is mistaken, but I need to know why it's mistaken.
A. Okay.

Q. All right? So if you wouldn't mind looking at those documents and anything else that you need.
A. Okay.

Q. And Ms Hedge will give you a copy of those two documents and anything else that you want so that you can explain the technology behind this problem that I see.
A. Okay.

THE COMMISSIONER: Thank you. We will adjourn, then, until 9.30, I think.

AT 4.03PM THE COMMISSION WAS ADJOURNED TO TUESDAY, 18 OCTOBER 2022 AT 9.30AM

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