STATEMENT OF ADJUNCT PROFESSOR LINZI WILSON-WILDE OAM

I, Adjunct Professor Linzi Marianne Adeline Wilson-Wilde OAM, Chief Executive Officer of Forensic Science Queensland, Queensland Health, do solemnly and sincerely declare that:

1. I am employed by Queensland Health Forensic Science Queensland (**FSQ**).

2. I hold:

   (a) a Bachelor of Science from La Trobe University;

   (b) a Postgraduate Diploma of Science from La Trobe University;

   (c) a Doctorate of Philosophy from the University of Canberra.

3. My curriculum vitae is **annexed** to this statement as **LWW-1**.

4. During the Commission of Inquiry into Forensic DNA Testing in Queensland in 2022 (the **COI**), I was asked to provide an opinion in response to nine letters of instructions over the period from about July 2022 to November 2022.

5. I provided the following reports to the COI:

   (a) Report dated 31 July 2022, in response to Instructions to expert dated 27 July 2022 (**DNA Thresholds Report**).

   (b) Report dated 7 August 2022, in response to Instructions to expert dated 27 July 2022 (**DNA Concentration Report**).

   (c) Report dated 25 August 2022, in response to Instructions to expert dated 4 August 2022 (**Report Statements and Thresholds Report**).

   (d) Report dated 20 September 2022, in response to Instructions to expert dated 1 September 2022 (**Options Paper Report**).

   (e) Report dated 20 October 2022, in response to Amended Instructions to expert dated 12 October 2022 (**Contamination Report**).

   (f) Report dated 18 November 2022, in response to Amended Instructions to expert dated 11 November 2022 (**Swabs and Wetting Agents Report**).

   (g) Report dated 24 November 2022, in response to Instructions to expert dated 19 November 2022 (**Success Rates Report**).

6. In preparation for the Commission of Inquiry to examine DNA Project 13 concerns (**Commission** or **Inquiry**), I have reviewed the material and correspondence I possess relating to the COI in order to assist in refreshing my memory. Unfortunately I am unable to access all correspondence and information I received at the time of the COI as I no longer have access to the email address that some of the documents were sent to. I provide this statement to the best of my recollection.

Current Practices undertaken at Forensic Science Queensland

7. I was appointed CEO of FSQ and commenced on 16 January 2023.

[redacted] [redacted]

8. On 22 August 2023, I provided a report to Parliament titled "Queensland Government First Progress Report, Delivery of Recommendations, Commission of Inquiry into Forensic DNA Testing in Queensland" (**Parliamentary Report**).

9. The Parliamentary Report sets out the COI recommendation implementation progress and the broader changes made at FSQ in the first 8 months of my appointment.

10. Annexed to this statement as **LWW-2** is a current list of the changes made since my appointment.

11. Since my appointment, FSQ has undergone a number of major reforms, including:

    (a) Three independent in-depth reviews, conducted by interstate experts, of the current Evidence Recovery, DNA Analytical, Illicit Drug Analysis, and Clandestine Laboratory Analysis services. The reviews included a review of the facilities, validations, methods and procedures and resulted in the identification of a number of additional areas for improvement.

    (b) The intensive training of scientists in DNA interpretation and an overhaul of the DNA interpretation guidelines, resulting in a significant increase in DNA results provided to police and the courts.

    (c) Establishment of a new leadership team and the development and implementation of a leadership training framework.

    (d) The development of a new project framework, including a robust project proposal approval process and final report sign off (including external independent review) prior to the implementation of methods.

    (e) Introduction of numerous mechanisms to support the development of a positive culture, transparent management communication and reporting, and the ability for staff to raise issues and have robust scientific discussion in a safe environment.

12. The 123 COI recommendations, provided in its report dated 13 December 2022 (**COI Report**), represent a small number of the changes I am looking to implement in FSQ.

13. To date, we have adopted and/or implemented 39 recommendations from the COI Report, with a further 62 recommendations in progress.

14. Sometimes, FSQ have taken the recommendations a step further, that is, by making changes that go beyond the COI Report. For instance, a number of recommendations:

    (a) relate to improvements to the quality system. We are also conducting a full review of the quality system with a view to implementing a new quality system framework, including a new software system and quality manual;

    (b) require the validation of particular methods. We have also conducted a gap analysis of all methods and are working through those anew.

15. When I commenced in January 2023, I reviewed all recommendations in the COI Report and categorised them into different themes (e.g. quality, innovation, stakeholder engagement) for the purpose of allocation and delivery. I also assigned indicative working timeframes for delivery of completion of each recommendation for internal use regarding prioritisation, resource management and project planning. Those timeframes were based on my

[redacted]
Ac
Date: 27/10/2023

[redacted]
Witnes
Date: 27/10/2023

understanding of the work that was needed to be completed, the availability of resources, interdependencies, and the terms of the recommendation (that is, whether the recommendation gave a timeframe for completion).

16. Once categorised, I allocated them to members of the Leadership Group within FSQ. The Leadership Group is currently comprised of the Managers of Forensic Biology, Forensic Chemistry, Quality, Innovation, and Corporate Services and two Executive Directors, as well as myself.

17. In or about the end of March or early April 2023, I started a high-level gap analysis of the validations in place for the current Evidence Recovery processes; that is, to identify whether every process in FSQ had a validation document in place. Although I was cognisant of the need to review the adequacy of validations conducted previously and the issues that may have arisen from those validations, my priority when I commenced as CEO was to ensure that the results that were presently being released to Queensland Police Services and the Department of Public Prosecutions were accurate and reliable.

18. This task also involved me reviewing, revising and implementing a new process for conducting validations themselves as in my view, the process FSQ had in place for performing, finalising and implementing validations was not in accordance with good practice. The project approval and empirical study design process is in place and we are currently finalising a more detailed validation guideline.

19. I engaged two independent, interstate experts in or about April and June 2023 to conduct an in-depth review of the current methods and procedures in Evidence Recovery and Analytical, and also relevant supporting validation documentation and the adequacy of those validations.

20. In addition, I am reviewing the Forensic Chemistry validations, methods and procedures.

21. So far, I believe that the changes we have made at FSQ have resulted in substantial changes to the methods, culture, quality, innovation, and therefore the provision of results to the justice system.

Recommendation 105

22. One of the recommendations made by the COI that FSQ is in the process of addressing is Recommendation 105, which states:

> **Rec 105.** **The laboratory should conduct a retrospective review of positive control extraction batches processed by the MultiProbe® II instrument to determine if this extraction method was performing sub-optimally, and if so, the period of time in which a sub-optimal method was used and whether there is utility in re-testing or re-analysing any potentially affected samples.**

23. As I understand it, Recommendation 105 was made following the COI's review into the use of the MultiPROBE® II PLUS HT EX FORENSIC WORKSTATION (MPII) Instruments (**Multiprobe** or **MPII**). The MPII was considered by Project 13, which concerns the verification of a method of

[redacted]
Date: 27/10 / 2023

[redacted]
Witness:
Date: 27 10 / 2023

DNA extraction using the Promega Corporation DNA IQ™ System (DNA IQ) protocol on the robotic platform MultiPROBE® II (**Project 13**).

24. In July 2023, Mr Brett Scott commenced at FSQ as Manager Quality. The Manager Quality was assigned a number of recommendations to action, including Recommendation 105. The indicative working timeframe I allocated for completion and delivery of this recommendation was December 2024.

25. Recommendation 105 involves a review of all extraction positive controls for extraction batches processed by the MPII, which was in place from on or about 2007 to 2016. This review requires the assessment of the performance of the positive controls and if suboptimal, a review of the results of the extracted samples.

26. Where the extraction method was likely to be suboptimal, the review would lead to the identification of samples that may require retesting or reanalysis.

27. Although not expressly required as part of Recommendation 105, the identification of samples that may require retesting or reanalysis are catalogued and forwarded to the Queensland Police Service (**QPS**) and/or the Office of the Department of Public Prosecutions (**ODPP**) for advice on whether retesting or reanalysis would be useful for the case where the samples were obtained. If so, QPS and ODPP would instigate a formal case review process.

28. The formal case review process is a 'legal led' review, whereby the case is first examined as to whether additional DNA results would be probative in the case from a prosecution or defence perspective. If this is so, then a review of the results and samples in the case is conducted to investigate potential options for further analysis. This would include retesting the sample by re-running the amplified DNA on the capillary electrophoresis (**CE**) instrument, or reamplifying from the original DNA extract (to try and improve the DNA profile result). If these do not produce a DNA result, or the information in the case indicates the analysis would not be successful (e.g. the previous DNA analysis was unsuccessful), then re-extracting the sample from the original retained substrate (e.g. re-extracting from the retained swab as not all DNA is likely to be removed in the original extraction), or re-sampling from the original exhibit (e.g. re-sampling from an item of clothing). If these are not successful, then looking at other probative previously untested items can be considered.

29. FSQ have not yet quantified how many extraction batches are to be reviewed as part of Recommendation 105, however, it is expected that there will be a significant number. FSQ does not currently have the resourcing available to commence this work. It is not possible to review the batches in one day, as has been asserted by Dr Wright.[1]

30. At this time, it is envisaged that this work will commence after the National Association of Testing Authorities (**NATA**) inspection in February or March 2024, and following the employment of at least 3 scientists as part of the Quality team (recruitment is currently underway).

31. The review of samples affected by Project 13 is covered under Recommendation 105, as these were samples that were analysed on the MPII. As indicated above, if those affected samples

[1] At paragraph 52 of her submission.

[redacted]

Date: 10 / 2023

[redacted]

Witn

Date: 10/ 2023

lead to a case review, the samples will be retested using current methods for DNA analysis and/or the original exhibit will be resampled.

32. The COI uncovered a number of issues with the DNA analysis methods in place at FSQ over the years. Those issues included issues related to extraction, amplification, injection times on the CE, DNA interpretation, spermatozoa microscopy, and bone and teeth analysis etc.

33. As a result, in or around early September 2023, Ms Natasha Mitchell, Manager Forensic Biology who commenced work at FSQ in March 2023, began performing a review of all validations (and the accompanying issues) conducted by FSQ from 2007. This includes a review of all project proposals, project reports and the various iterations of those documents and the methods employed under those projects. This is a substantial task which I expect will take at least a further 2-3 months to complete. The intention is to produce a high level spreadsheet type document available to those doing case reviews to inform them of any particular issues that are now known to have been in existence at the time of the original testing, so as that they may take that into account when deciding what they ought do by way of further testing.

34. The outcome of this review will be to identify other potential issues with the DNA analysis methods over time starting in 2007, not just those involving extraction or those identified by the COI. This review will go back to the time of the Chelex method and will therefore cover Project 13. If other potential issues are identified, samples that may have been affected by those potential issues can be identified and put forward to QPS and the DPP for formal case review consideration.

35. In other words FSQ is not limiting itself to reviewing, retesting and reanalysing samples where there has been suboptimal extraction. FSQ intend to identify all potential issues that have arisen in the past to ensure that all samples that may have been affected by those potential issues can be considered for retesting or reanalysis, as part of a formal case review with the QPS and DPP.

36. In looking back at those projects and the Standard Operating Procedures (**SOPs**) which implemented those methods for the purposes of this statement, I have prepared a brief timeline of events following the implementation of Project 13 in October 2007 (**Timeline**):

Year	Date	Method	Comment
2007		Chelex DNA extraction method	Manual method of DNA extraction
	29 October	DNA IQ method on MPII (two instruments – MPIIA and MPIIB)	Fully automated extraction method of samples containing blood and cells (e.g. buccal or saliva)
2008	February		Contamination issues commenced
	19 March	DNA IQ method on MPII	Off-deck Lysis (i.e. manual lysis) reintroduced
	22 April	DNA IQ chemistry change	SDS replaced by Sarcosyl
	14 July		MPIIA no longer used for casework samples, reference samples only MPIIB casework samples in checkerboard pattern
	28 July	Chelex manual method commenced	DNA IQ on MPIIs ceased and optimisation and validation work on automated platforms continued
2009	22 June	DNA IQ manual method	Replaced Chelex method

[redacted]
Date 27 / 10 / 2023

Witne[redacted]
Date 27 / 10 / 2023

	20 August	DNA IQ on MPII re-implemented	Off-deck lysis

37. The Timeline indicates that the method of extraction verified by Project 13 was in place for about 5 months (i.e. from October 2007 to 19 March 2008).

38. The current methods of DNA extraction in use now are as follows:

(a) DNA Extraction: DNA IQ kit on Maxwell 16 and Maxwell FSC (Promega), DNA Investigator kit on QIAsymphony SP (QIAGEN), Nucleospin cleanup (Machery-Nagel), Microcon concentration (Merck);

(b) DNA Quantification: Quantifiler Trio kit on QuantStudio 5 (Thermo Fisher);

(c) PCR Amplification: PowerPlex21 kit (Promega) on Proflex (Thermo Fisher);

(d) CE: 3500xL – using Data Collection Software v4 (Thermo Fisher), Genemapper v1.6.2 (Thermo Fisher).

39. Whilst the above methods and instruments are well categorized in Australia for forensic use, we are looking to improve and update these methods.

40. In addition to implementing the COI recommendations, we have commenced the procurement of new extraction robots and have secured the funding to replace and validate all DNA analysis methods.

41. We will also be researching and validating new complementary methods such as YSTR testing, a DNA test targeting the male y chromosome. Presently, if these methods are required, we have agreements in place with interstate and overseas forensic laboratories to perform those tests.

Contamination Report

42. There were a number of scientists working on various issues for the COI. I was one of those scientists. I wanted to assist the COI as I believed it would benefit Queensland and forensic science more broadly if its laboratories, methods and procedures were improved to be consistent with national and international good practice.

43. At the time I was assisting the COI, I was employed as the Director of Forensic Science South Australia (**FSSA**). I would usually complete my work for the COI outside of my usual working hours, including over the weekend.

44. On 16 September 2022, Counsel Assisting Susan Hedge asked if I had capacity to provide a further report. By then, I had already assisted the COI by preparing 3 reports and I was, at that time, still completing the Options Paper Report. A copy of that email is annexed to this statement at **LWW-3**.

45. That email included the following information:

[redacted]

Date: 7/10/2023

Witness: [redacted]

Date: 7/10/2023

Issue

The DNAIQ instrument developed by Promega was utilized at FSS. In and around 2008, it was discovered that the seals from the DNAIQ products (consumables) in the extraction phase were leading to cross-contamination amongst different, unrelated samples. The issue was documented in various OQIs. It resulted in one case in a victim of one offence being identified as a possible offender in another sample. Once the laboratory discovered the issue, there was a retrospective assessment of all the samples that were processed with the relevant consumables. The issue affected many batches of samples and significant work was required to rectify the issue. The FSS was required to send out correspondence to the Queensland Police Service, the Officer of the Director of Public Prosecutions and the Courts about the issue.

Instructions

In summary, the instructions for the task would be to advise on:

- *Whether the methods, systems and processes in relation to the above two issues were consistent with international best practice when the issue arose;*
- *Whether the identification, investigation and resolution of the issue was appropriate and consistent with international best practice;*
- *Whether the amended methods, systems and processes implemented in each case was consistent with international best practice.*

46. My understanding of my instructions was that I was to look into the contamination of samples that were discovered in 2008(**Contamination Issue**).

47. On 21 September 2022, I received an email from Counsel Assisting with proposed instructions for providing an opinion on the Contamination Issue. A copy of the proposed letter of instruction to expert and the email of 21 September 2022 is annexed to this statement at **LWW-4**.

48. Between 21 and 23 September 2022, Counsel Assisting and I discussed the due date for the Contamination Report as I was due to be overseas in Denmark chairing the ISO TC272 Meeting from 30 September 2022 to 10 October 2022.

49. On 23 September 2022 at about 7pm I received instructions and a brief of material from Counsel Assisting. The email indicated that further material, including correspondence, investigation files and reports, were to be provided at 12pm on Tuesday 27 September 2022. I do not recall reviewing the material then, but imagine I would have given it a cursory look. At this time, my priority would have been preparing to give evidence at the COI on 28 September 2022. A copy of this email is annexed to this statement at **LWW-5**.

50. On or about 27 September 2022, I had a meeting with Counsel Assisting to discuss the work required for this task and the timeframes. It was clear to me that the work was focused on the contamination issues that arose in and around 2008, looking to a potential cause for the Contamination Issue, and whether the laboratory's response to the Contamination Issue was consistent with good practice.

[redacted]

Date: 27 / 10 / 2023

[redacted]

Date: 27 / 10 / 2023

51. On 28 September 2022 I gave evidence in the COI on 28 September 2022, primarily on the Options Paper Report.

52. On 29 and 30 September 2022 (until I flew out), I believe I was preparing for the ISO Meeting as well as working my usual hours for FSSA.

53. From 30 September to 10 October 2022 I chaired the ISO TC272 Meeting in Denmark. The purpose of the meeting was to develop international standards for forensic science service delivery. I do not believe I would have had an opportunity to have reviewed any of the material for the Contamination Issue during this time, given my role at this meeting.

54. On 6 October 2022 (while I was overseas), I received a further brief of material from the COI. A copy of this email is annexed to this statement at **LWW-6.**

55. On 12 October 2022, I received "refined" instructions from Counsel Assisting and a supplementary brief of material. A copy of the amended letter of instruction to expert is annexed to this statement at **LWW-7**.

56. The deadline for provision of the report was 17 October 2022.

57. The background for the parcel of work I was given by the COI and contained in the amended letter of instruction I received on 12 October 2022 was as follows:

> ***Background***
>
> 1. *The Commission of Inquiry into DNA testing in Queensland was announced by the Queensland Premier on 6 June 2022 and commenced on 13 June 2022.*
> 2. *The Commission was prompted by a number of issues raised publicly regarding the adequacy of forensic DNA testing undertaken at the Queensland Health Forensic and Scientific Services (QHFSS).*
> 3. *General and specific concerns have been raised regarding cross contamination of samples using DNA IQ testing instrument in the QHFSS DNA Analysis Unit.*
> 4. *In and around 2008, it was discovered that the seals from the DNA IQ products (consumables) in the extraction phase were leading to cross-contamination amongst different, unrelated samples. The issue was documents in various OQIs. Once the laboratory discovered the issue, there was a retrospective assessment of all the samples that were processed with the relevant consumables. The issue affected many batches of samples.*
> 5. *QHFSS conducted both an internal audit, and procured an external audit, of the issue.*

58. On 14 October 2022, I received the statement of Allan McNevin sworn 13 October 2022.

59. At or about midnight on 17 October 2022, I provided Counsel Assisting with a draft version of the Contamination report. In that email I indicated:

> *I am concerned that there were an extensive number of documents and some were very large. I have endeavoured to work my way through them, however I do have*

[redacted]

Witne[redacted]

Date[redacted]/ 10 / 2023

concerns as to the depth I have been able to go in all of the documents (some I have gone into extensively) given the timeframes and the volume.

60. At about 11pm on 17 October 2022, Counsel Assisting emailed me with feedback on the draft report, as well as a marked up draft report. In the email, she stated:

Overall, the report deals with the issues the Commission is interested in and identifies particular issues where improvements could be made…

61. A copy of the marked up draft report dated 17 October 2022 is annexed to this statement at **LWW-8**.

62. On or about 18 October 2022 at about 4pm, I had a virtual meeting with Counsel Assisting and possibly one or more other person(s) whose name(s) I cannot recall (possibly Eleanor Lynch and Jac Thong, who were both assisting the COI) to discuss my draft report.

63. A copy of the emails between Counsel Assisting and I from 12 October 2022 to 18 October 2022 as referred to in paragraphs 55 to 62 above are annexed to this statement at **LWW-9**.

64. Following our meeting on 18 October 2022 at about 6.30pm, Counsel Assisting provided me with further material to consider. That material included validation documents, including Projects 9, 13, 21 and 22, a chronology and the signed statement of Thomas Nurthen. The email noted:

Discussion Points

In summary from the telephone discussion, we understand the topics you will review are as follows:

1. *validations;*
2. *the overall time taken for an investigation (ie. OQI, audit or report) to be completed;*
3. *the adequacy of information contained in an OQI report to assist with the identification of systematic issues; and*
4. *any recommendations you may have for future best practice in respect of documents created by QHFSS (ie. dates on documents, additional information fields etc).*

65. A copy of this email is annexed to this statement at **LWW-10**.

66. It appears that I took the day off work at FSSA on 20 October 2022 in order to complete the Contamination Report.

67. On 20 October 2022:

(a) At about 1.30am, I provided Counsel Assisting with a further draft version of the Contamination Report. At paragraph 23 of that draft, I wrote:

[redacted]
Date: 27 / 10 / 2023

[redacted]
Witness
Date: 27 / 10 / 2023

I note I have not reviewed the validation documentation concerning the methods described in paragraph 5, and so cannot comment on the appropriateness of the validation and therefore the appropriateness of the implementation.

(b) At around 10am, Counsel Assisting provided me with a marked up version of the draft report. Counsel Assisting stated in her email:

Please find attached the marked up version with our suggested changes and comments. They are all fairly minor, except for one issue about the validation documents.

(c) In the revised draft report, Counsel Assisting suggested that the draft paragraph 23 be amended to the following:

21. The DNA IQ system is a reliable and robust method for extracting DNA from forensic samples.
22. The use of the manual and automated DNA IQ methods is within the bounds of expectation for this methodology. The DNA IQ method is designed specifically for the extraction of DNA from forensic (and paternity) samples (see https://www.promega.com.au/products/forensic-dna-analysis-ce/dna-isolation/dna-iq-system/?catNum=DC6701) and I did not identify any ~~no~~ significant deviation from the manufacturers recommendations or accepted protocols ~~was identified~~.

~~22.~~23. The use of these methods was not outside what would be considered best practice for a forensic DNA laboratory in 2008.
~~23.~~24. I note I have not had sufficient time to reviewed the validation documentation concerning the methods described in paragraph 5, and so cannot comment on the appropriateness of the validation and therefore the appropriateness of the implementation.
~~24.~~25. There is evidence to suggest that the automated method may not have been sufficiently validated when originally implemented, as documented in the External Review of Operations Report – Drs Sloots and Whiley, FSS.0001.0024.0805. The report states *"it may appear that the original issue concerning the cross-contamination of samples in the deep-well plates could have been prevented if this change in procedure had been fully validated against existing protocol when the new method was introduced."* This would indicate that the validation of the automated method could have been more robust.

Susan Hedge
This is my understanding from our conversation and your edits, but please confirm.

Susan Hedge
Again, please confirm this is accurate. Or, did the validation material we sent you on 18/10/2022 not cover what you needed?

This draft version of the Contamination Report is annexed to this statement at **LWW-11**.

(d) Those changes did reflect things I had said to Counsel Assisting.

(e) Between around 11am to 12pm, Counsel Assisting and I discussed some further, minor changes.

(f) At about 11.54am, I emailed Counsel Assisting to see when the revised statement was required as I had some concerns.

(g) At about 12:26pm Counsel Assisting emailed that ideally the report would be given that afternoon.

(h) At about 2.26pm, Counsel Assisting emailed saying:

I spoke to Michael, he would like you to do the review of the validation including with the DNAIQ manual. Returning the finalised report to us tonight is fine.

"Michael" was, in the context of that email, Michael Hodge KC, who was Senior Counsel Assisting the inquiry.

(i) At about 5.53pm, Counsel Assisting provided me with two Promega Manuals in order to review and then finalise my report. At that time, I did not know if I was also required to give evidence in the COI on the following day.

[redacted]
Date 27 / 10 / 2023

Witness [redacted]
Date 27 / 10 / 2023

68. The emails referred to above are annexed to this statement as **LWW-12**.

68.1 It looks as if there must have been a telephone call between Susan Hedge and I sometime around midday for there to have been a request made by me for the manuals, which I received at about 6pm.

69. I provided the Contamination Report to the COI on 20 October 2022 at 10.30pm.

70. I have a recollection that I had a discussion with Susan Hedge about Project 13 where, to the best of my recollection, I informed Counsel Assisting that:

(a) the change to a fully automated extraction was a significant change to have occurred at that time and should have been fully validated;

(b) there was a difference in yield between the automated and manual extraction methods in Project 13, which was greater than expected;

(c) I believed that this was possibly due to issues with the automated lysis step, and that the issue may have been somewhat addressed with a return to manual lysis in 2009.

71. I have no recollection of any response by Ms Hedge to these issues.

72. I am unable to say when that occurred because there does not appear to have been a formal meeting, as far as my records show, between those documents being emailed to me on 18 October and the provision of my report on 20 October and it would seem I did not have the opportunity to review the Project 13 draft report until the evening of 20 October.

73. I had a lot of communication with Susan Hedge over that period of time and it may be that there was an unscheduled communication that occurred in which this conversation happened.

74. That said, the available timeframe would not have allowed me much time to formalise my opinion and express it. I cannot exclude the possibility that a conversation occurred after than the provision of the final report.

75. I did not have a memory of the sequence of events on 20 October 2022 described above. I reviewed these documents for the purposes of preparing this statement and saw what they revealed as to what occurred with respect to the specific request for me to comment on the "validation" of Project 13. Nevertheless, I still have the memory of the discussion with Susan Hedge described above.

76. In any event, I recorded in the Contamination Report that "*the verification of the automated method is not consistent with expected good practice*" which addressed the question I was asked in the email of 2:26pm. I was not asked for any further detail about that opinion.

77. In total, I had been provided with a suite of 148 documents (exceeding 9,000 pages) to review for the parcel of work concerning the Contamination Issue. A list of the material I received when preparing this report is annexed to this statement at **LWW-13**.

78. From receipt of my revised instructions to submitted report, it was 8 days.

[redacted]

Date: 7 / 10 / 2023

Witn[redacted]

Date: 7 / 10 / 2023

79. I answered all questions given in the context of the background information and focus on the Contamination Issue and the samples that were analysed in 2008 as part of the investigation into the Contamination Issue.

Project 13

80. In order to provide the Contamination Report, I was briefed with and reviewed Project 13.

81. The version of the Project 13 report that I was provided and reviewed appears to be in draft as there are parts of the report that are not finalised. This is problematic as it cannot be ascertained whether, if it was finalised, later changes were made to the content. It is also good practice to have a formal review and approval of project reports prior to implementation of any method.

82. As stated in paragraph 22 above, Project 13 concerns the verification of a method using the Promega Corporation DNA IQ™ System (**DNA IQ**) protocol on the robotic platform MPII.

83. As set out in the Contamination Report at paragraphs 4 to 10, a contamination issue with DNA samples arose in or about February 2008 following the implementation of Project 13 via SOP 24897 "Automated DNA IQ™ Method of Extracting DNA from Blood and Cell Substrates", version 2 (valid from 11 January 2008). The Project 13 Report document is also marked as "August 2008" by which time Project 13 was not still in operation. That makes it difficult to know what is being represented in the document and what can be made of it.

84. To assist this Commission of Inquiry, I provide the following information:

(a) DNA IQ is a method used for the isolation (extraction) of DNA from biological material.

(b) The extraction method comprises four general steps: prelysis/lysis, DNA capture, washing, and elution.

(i) Pre-lysis/lysis – addition of an extraction buffer to remove the biological material (e.g. blood) from the substrate (e.g. swab) and break open the cell membranes, denature (breaks apart) proteins and inactivate enzymes. The substrate is removed leaving the now liquid sample in the tube.

(ii) DNA capture – addition of a lysis buffer and DTT to further breakdown proteins and to ensure the DNA is in a stable solution to prevent any degradation of the DNA and the addition of a lysis buffer containing magnetic bead resin to bind and immobilise the DNA to the beads.

(iii) Washing – addition of a wash buffer to wash the beads with the captured DNA to remove any inhibitors and cellular material, leaving the clean DNA bound to the beads.

(iv) Elution – addition of an elution buffer to release the DNA from the beads into a stable solution ready for downstream processing.

(c) The DNA IQ method can be performed manually, automated using liquid handling robotics (rarer), or a combination of manual and automatic steps. Usually the pre-lysis step is performed manually, with the DNA capture, washing and elution steps automated.

[redacted]

Date 27 / 10 / 2023

Witn [redacted]

Date 27 / 10 / 2023

(d) I note that some documentation refers only to 'off-deck lysis'. I took this to mean the pre-lysis/lysis step (referred to in paragraph 84(b)(i)) was performed manually.

85. Prior to Project 13, Forensic and Scientific Services (**FSS**) had previously used a DNA extraction method called Chelex. This was an old standard method used in forensic laboratories, but the method was not particularly effective at removing inhibitors that affect downstream DNA amplification.

86. FSS tested/verified DNA IQ as a fully manual protocol but never implemented it. This was Project 11 "Report on the Validation of a manual method for Extracting DNA using the DNA IQ™ System" dated August 2008.

87. FSS "verified" a fully automated process, and this is what the Project 13 was about.

88. Validation refers to the robust optimisation and testing of a method to ensure the method is fit for purpose and the limitations and reliable working range of the method is well characterised. Verification is conducted when a method has been introduced elsewhere and is well characterised, therefore, the laboratory must ensure the method works as expected in the new setting. The choice of validation or verification can be a risk-based approach and is highly dependent on the criticality of the method or instrument.

89. In Project 13 the analysis compared the fully automated DNA IQ method to the manual method verified in Project 11.

90. The change of a DNA extraction method from manual to fully automated is significant. Most laboratories in Australia run a part automated method, where the lysis step is conducted manually, and the DNA capture, washing and elution is completed on a robotic platform; this was the case in 2007 when Project 13 was implemented.

91. In my experience, it may be expected that there could be a reduction in the amount of DNA recovered from samples when using a robotic platform, when compared to a manual platform, although this reduction is highly dependent on the particular method.

92. For instance, an automated process may have difficulty in getting similar amounts of DNA when compared to a manual method, because a human can perform functions such as mix a sample longer, tip a tube so that the tip can more easily reach the bottom of a tube to remove all of the sample etc.

93. This is particularly the case during the lysis step.

94. It can be difficult to automate the lysis step and obtain an equivalent DNA yield to the manual version of the method. This is because swabs or other bulky material are more difficult for robotic platforms to deal with. It follows that I expected there to be a reduction in yield where the lysis step was automated.

Project 13 Concerns

95. I understand that there are concerns about the DNA yield issues expressed in Project 13, that is, that the report in its abstract suggests the automated procedure was comparable to the

[redacted]

Date: 7 / 10 / 2023

[redacted]

Date: 7 / 10 / 2023

manual procedure, while the results in Figures 9-12 of the report indicated that there was 67%-92% difference in yield between the two methods (**DNA Yield Issue**).

96. Noting the expected reduction in DNA extraction explained at paragraphs 91-94 above, it therefore did not surprise me that there was a difference in the DNA yield between the manual and fully automated processes, although the levels found showed a marked difference greater than I would have expected.

97. Yield issues regarding the DNA IQ method were raised to the COI by Dr Bruce Budowle in his report dated 15 September 2023, which was sent to me on 20 September 2022.

98. Dr Budowle was tasked with reviewing and assessing the appropriateness of not concentrating low quantity DNA samples. In that report, Dr Budowle looked at a DNA IQ method study, and stated:

> *QHFSS performed a validation study to stand up the DNA IQ System. In that study their initial recovery of DNA from blood samples in a 50 µl volume showed low yield; however, the buccal cells did not show a similar loss.*
>
> *While each laboratory should validate internally the methods that will be implemented and some variation is expected between laboratories, laboratories should not work within a bubble. If other laboratories are not having to increase the target value to ~100 µl, then* ***QHFSS should consider the possibility that there is something wrong with how their studies were undertaken****...*
>
> ***The buccal cells did not show any substantial difference in total DNA yield with the change of procedure, which may suggest that there is something compromising the blood samples as opposed to the elution volume being the solution to achieve desired yields.***
>
> *What the actual cause and solution are unknown regarding the finding of low performance of the initial blood extraction study.*
>
> (my emphasis added)

99. My understanding of Dr Budowle's comments above is that there was an issue with the FSQ extraction method for blood samples. This pattern of compromised DNA yield for blood samples was also found in Project 13 when compared to buccal.

100. An issue regarding DNA yield was also raised later by Dr Budowle, Ms Jo Veth and Dr Kirsty Wright in their reports regarding the Blackburn samples in late November 2022.

101. There were a large number of issues with the Project 13 verification study.

102. For changes of this nature – moving a method from a manual platform to a fully automated one - a full optimisation and validation study should have been conducted. An optimisation study would involve working out what all the criteria, settings, and/or methods should be to get the best results of the method. A validation study is to understand the limitations of the system, characterise the working range (e.g. understand the sensitivity, specificity, impact of inhibitors etc) and ensure it is reproducible and repeatable, and results are as expected.

[redacted]

Date: 7 / 10 / 2023

[redacted]

Date: 7 / 10 / 2023

103. Therefore, Project 13 should not have been a verification, it should have been a full optimisation and validation study.

104. There were numerous other issues with Project 13.

105. Looking at the Project at this time for the purpose of this Commission, I note the following issues with Project 13:

(a) the limited investigation of the components of the automated platform (e.g. pipetting accuracy, tip size differences, heater performance, shaker performance, contamination checks, chemistry changes, control samples used etc);

(b) the method was not tested to its limits and samples used had high levels of genomic DNA of high quality. These types of samples are not reflective of the range of casework type samples;

(c) in Figures 9-12 the DNA yield reduction from manual to fully automated was 67-92% depending on swab (rayon or cotton) and sample type (blood or buccal (cheek) cells). Blood samples showing the highest yield difference (92%);

(d) DNA yield was determined via DNA quantitation, but all samples should have been progressed to DNA profile generation, so the impact of the lower quantitation levels on the profile results could be commented on;

(e) blood as a control can be problematic as you do not know exactly how much DNA is present and there may be potential variations in white blood cell counts between donors – two donors were used in this study;

(f) buccal samples as a control may also be problematic as again you do not know how much DNA is present and any potential DNA concentrations between donors – two donors were used in this study;

(g) no comparison to the Chelex method (the previous method) was included, so you cannot determine the impact of the method change;

(h) no known genomic DNA standard was used to compare the method with a sample of known DNA amounts;

(i) there is insufficient information regarding the methods to replicate the testing or understand the methods and result properly;

(j) there is a significant contamination event that should have elicited a root cause analysis and further testing;

(k) inconsistencies and contradictions in the report, such as on page 5 it describes a change in method to a double elution using 2 x 50µL of elution buffer, however in the program test file underneath it states the method as a double elution using 2 x 60 µL of elution buffer;

(l) there is insufficient consideration of the results of the testing and what the result indicate in regards to the methods and any subsequent testing that should be conducted;

(m) the project report looks to be in draft with sections missing, typographical errors, and incomplete sentences.

[redacted]

Date: 27/10/2023

[redacted]

Date: 27/10/2023

106. In terms of other inconsistencies in the report and following my review for the purposes of this Commission, I note that Figure 9, which shows manual versus automated blood sensitivity on rayon swabs, is inconsistent with the findings in Figure 13, the distribution of DNA concentration over a dilution series:

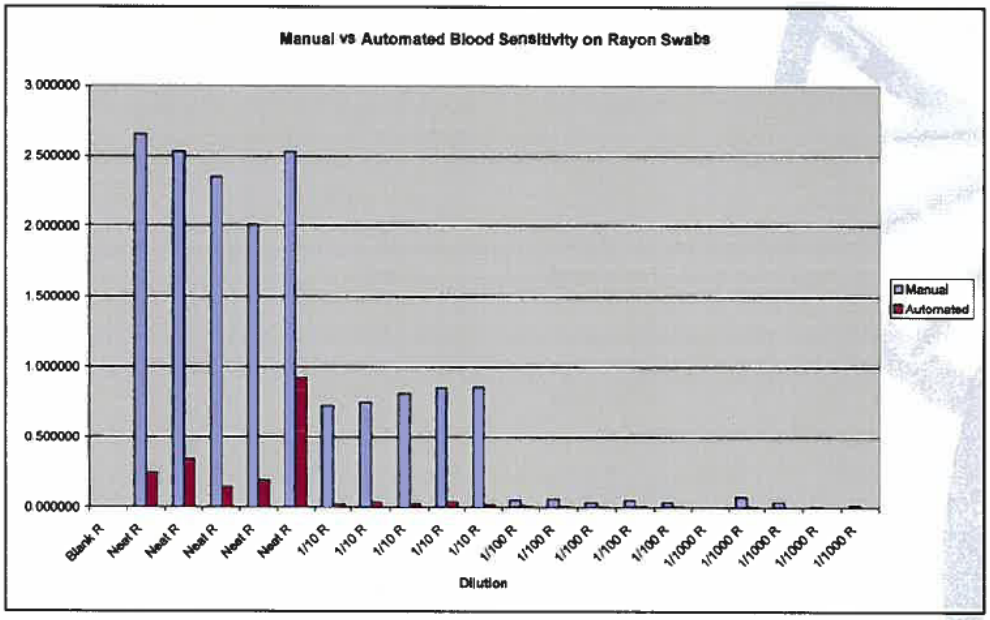


Figure 9. Comparison of sensitivity between the manual and automated DNA IQ™ methods for blood samples on rayon swabs.

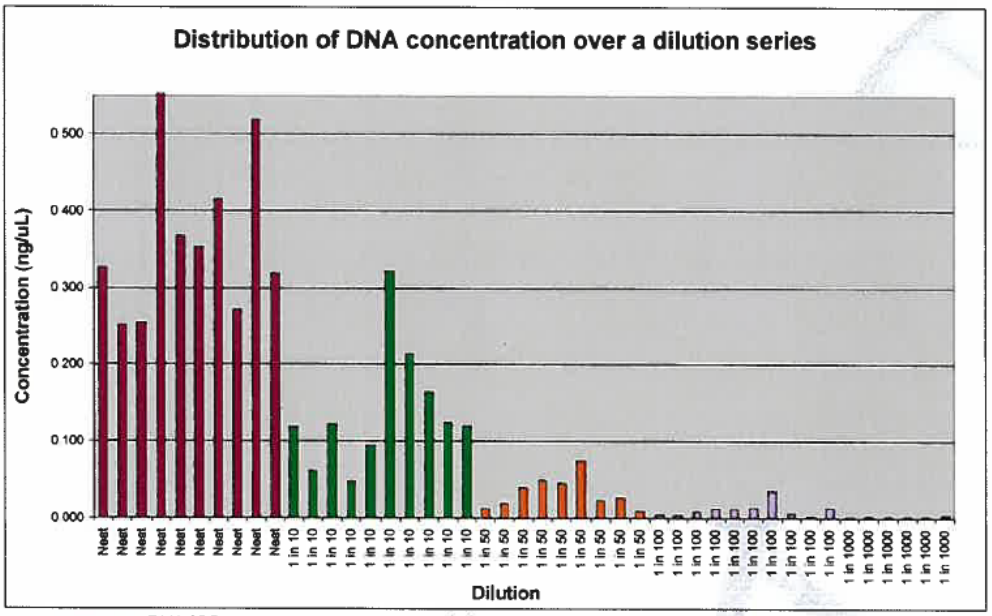


Figure 13. DNA IQ™ sensitivity across various dilutions

107. Section 6.7 of the Project 13 report including Figure 13 shows that results were obtained from blood swabs to a dilution of 1:1000, however, Figure 9 suggests that no results were obtained for the automated method at this level and also 1:100. In addition, the concentration that was obtained using the automated method, as set out in Figure 13, is higher than the concentration values represented in Figure 9.

[redacted]

Date: 7 / 10 / 2023

[redacted]

Date: 24 / 10 / 2023

108. Another inconsistency involves Figure 9 and Table 7, which shows the DNA profile results for neat blood samples extracted on the automated platform:

Table 7. DNA profile results for samples extracted using various volumes of Extraction Buffer, for 8 replicates.

Extraction Buffer Volume (µL)	Mean [DNA] (ng/µL)	SD
300	2.04	0.07
350	2.16	0.09
400	1.69	0.10
450	3.14	0.13
500	3.64	0.17

109. Assuming that Figure 9 shows the concentration of DNA in ng/µL, the DNA yield range is approximately 0.2-0.9 ng/µL; Table 7 shows that when using an extraction buffer volume of 500 µL (which is the automated method and the same quantity of extraction buffer volume used in Figure 9) the mean DNA concentration of 8 replicates is 3.64ng/µL.

110. In my opinion, there is no absolute DNA yield threshold that determines whether a method has passed or failed in regards to DNA extraction from blood swabs. The acceptable threshold is dependent on many factors including the blood donor (e.g. their white blood cell count), the amount of blood being extracted from, age of the sample, conditions of storage of the sample, and the extraction method being used. It is good practice when testing the extraction efficiency of a method to test the limits of the system (varying the amounts of blood extracted) and progress all samples to DNA profile generation.

111. I recall identifying some of the issues above at the time I prepared the Contamination Report.

112. As a result of the issues I then identified, I wrote in the Contamination Report that "*the verification of the automated method is not consistent with expected good practice*".

113. Given the number of issues with Project 13, it is difficult to draw any meaningful conclusions from any of the results. Whilst there were issues with the DNA yield on the face of the draft Project 13 report, the extent of these issues including the significance (and reliability) of the 67%-92% DNA yield result is unclear. In other words, there is an unreliability about those yield results that of itself makes it unscientific to extrapolate those results across later testing. To be clear, that unreliability of itself is also part of the reason why the method ought not to have been implemented.

114. As indicated above, I understood my task to be looking specifically at the Contamination Issue.

115. As set out above, the DNA Yield Issue was just one of a multitude of issues with the Project 13 report. Ultimately, it should never have been implemented given the number of issues, including that it was a verification and not a validation.

116. In the Contamination Report, I did comment on other issues I found regarding the method used for Project 13; however, these were directly connected to the Contamination Issue that I was tasked at looking at.

[redacted]

Date: 10/2023

[redacted]

Date: 11/10/2023

117. For the remaining issues, I called out the report as a whole as "*not consistent with expected good practice*". This is science speak for "flawed".

118. Importantly, as I was tasked with looking at the Contamination Issue, I was not provided with the project proposal or any project design information relating to Project 13 and therefore I felt it was very hard to provide detailed commentary with a scientific basis on the project results, as I could not be certain of the study design impact on the results or even the reliability of those results.

119. For me to have commented any further, I would have required:

(a) the project proposal/s, including the project design information;

(b) the data obtained and analysed during the project;

(c) DNA profile results.

120. Also, from the documents provided to me, I understood that the extraction method had changed since Project 13 had been implemented. On the face of the brief, the method that was implemented in 2009 had improved the DNA Yield Issue.

121. From the suspension of the automated lysis process in March 2008 through until the implementation of the 2009 Method, there is reason to think that the yield issues were materially improved.

Changes in 2007 to 2009

122. As indicated in the Timeline, the extraction method underwent significant change after Project 13 was implemented in October 2007.

123. In August 2009, FSQ implemented SOP 24897 "Automated DNA IQ™ Method of Extracting Data" version 6 (**2009 Method**).

124. On review now of the brief of material that was provided to me for the Contamination Report, the major changes between the method introduced following Project 13 and the 2009 Method included:

(a) a change from automated to manual off-deck for the pre-lysis step;

(b) a change in extraction buffer volume from 500µL to 300µL;

(c) SDS (20%) replaced by Sarcosyl (40%) for pre-lysis step;

(d) syringes on the MPII changed from 500µL to 1000µL;

(e) a change in the lysis buffer with magnetic beads from 1007µL (957µL buffer and 50µL resin beads) to 607µL (557µL buffer and 50µL resin);

(f) a change of deck layout to accommodate a change in labware and improved movement range of 8 tip MPII arm over the deck;

(g) automated addition of DNA IQ Resin (it was previously manual);

[redacted]

Date: 7 / 10 / 2023

[redacted]

Date: 7 / 10 / 2023

(h) off-board mixing of DNA IQ Resin, instead of automated mixing on the MPII, the plate is taken off by the scientist, sealed using pierceable aluminium heat seal and mixed using MixMate. The seal is then pierced by the scientist and the plate put back on MPII deck to resume the automated extraction;

(i) the magnet was changed from a PKI magnet to an ABI magnet to remove the need for user to 'click' in the plate;

(j) the electronic platemap was changed to allow for volume changes and new steps in the protocol;

(k) modifications where made to pipette dispense heights; optimisation of the scan, aspirate, dispense and retract speeds; insertion of post-dispense transport air gaps to remove bubbles; and the removal of flush protocols;

(l) tube changes to Nunc Bank-It™ tubes rather than 2.-ml screw cap tubes.

125. The following table illustrates the specific changes (highlighted in yellow) between the Project 13 (version 1 of SOP 24897) method and the 2009 (version 6 of SOP 24897) method.

	2007 Fully Automated Method		**2009 Off-Deck + Auto Protocol**	
Process	**Units**	**Performed**	**Units**	**Performed**
Add Extraction Buffer	500µL (TNE. ProK SDS)	Auto	300µL (TNE, ProK, Sarcosyl)	Manual
Incubate	37°C 45min	Auto	37°C 45min	Manual
Remove substrate	N/A	Manual	N/A	Manual
Incubate			65°C for 10min	Manual
Add Resin-Lysis Buffer	50µL (7+43 µL)	Auto	53µL (8.85 + 44.15 µL)	Auto
Add Lysis-DTT	957µL	Auto	557µL*	Auto
Mix	5min on shaker	Auto	1100rpm 5 min	Manual intervention
Remove Lysis-DTT		Auto		Auto
Wash 1 – Lysis-DTT	125µL	Auto	125µL	Auto
Wash 2– Wash Buffer	100µL	Auto	100µL	Auto
Wash 3 – Wash Buffer	100µL	Auto	100µL	Auto
Wash 4 – Wash Buffer	100µL	Auto	100µL	Auto
Drying	5min room temp	Auto	5 min room temp	Auto
Elution 1	60µL	Auto	60µL	Auto
Elution 2	60µL	Auto	60µL	Auto

30.10.2023

30.10.23

[redacted]

Date 30 / 10 / 2023

[redacted]

Wit

Date 30 / 10 / 2023

126. I recall at the time I was preparing the Contamination Report, I made note of the above changes in the table, as I was looking at the number of changes made and the extent of those changes following the Contamination Issue.

127. These above collective changes were, in my view, significant. A number of the changes made, even in isolation, warranted a re-validation of that aspect of the method.

128. In my experience the number of the significant changes made between the methods would have led to an improvement in DNA yield.

129. In my opinion, given the number of substantial changes made between Project 13 (which resulted in version 1 of SOP 24897) and the 2009 Method (which resulted in version 6 of SOP 24897), the results from Project 13 could not be applied to the 2009 Method, which I understand Dr Wright purports to do. To be clear, it may very well be that there were extraction issues post the reimplementation of the partially automated extraction method in 2009 but, in my opinion, it is not scientifically sound to extrapolate the extraction issues that arose from the Project 13 method as applying to the 2009 method or any subsequent method.

130. As part of my brief of material for the Contamination Report, I was provided with:

(a) Project 21 "A Modified DNA IQ™ Method Consisting of Off-Desk Lysis to Allow Supernatant Retention for Presumptive Identification of α-Amylase" dated February 2008 (**Project 21**);

(b) Project 22 "A Modified DNA IQ™ Method for Off-Desk Lysis Prior to Performing Automated DNA Extraction" dated February 2008 (**Project 22**);

(c) Presentation titled " Presentation – MP11 Enhancements" (**Presentation**).

131. Projects 21 and 22 describe work done as part of the conversion of the automated pre-lysis step to a manual step.

132. Project 22 indicated a 4.5 fold increase in DNA yield as the report states:

> *When compared to results for extraction positive controls (QC blood swabs) that were extracted since January 2008 as part of routine laboratory processes, the positive controls that were included in these series of experiments generated higher quantitation values but similar DNA profile results (Table 5). The off-deck positive controls produced an average DNA concentration of 1.22nq/μL (SD 0.35), compared to 0.27ng/μL (SD 0.12) for routine QC blood swabs, i.e. the concentration of off-deck controls was over 4-fold greater than controls extracted using the current protocol. Positive controls that were extracted using the off-deck method displayed more allelic imbalance compared to routine positive controls, i.e. 20% (5/25) compared to 9% (3/34). Four out of the five occurrences of allelic imbalance in off-deck controls were one locus events with a peak height ratio greater than 60%, and therefore pass the in-house acceptance criteria for extraction positive controls.*

133. The data in Table 3 of the Project 22 report, which shows the DNA quantification results for blood and cells also indicates that a full profile was obtained for all samples except one invalidated result. Table 3 does not indicate that the method used in Project 22 was failing in its ability to yield DNA.

[redacted]

Date: 7 / 10 / 2023

[redacted]

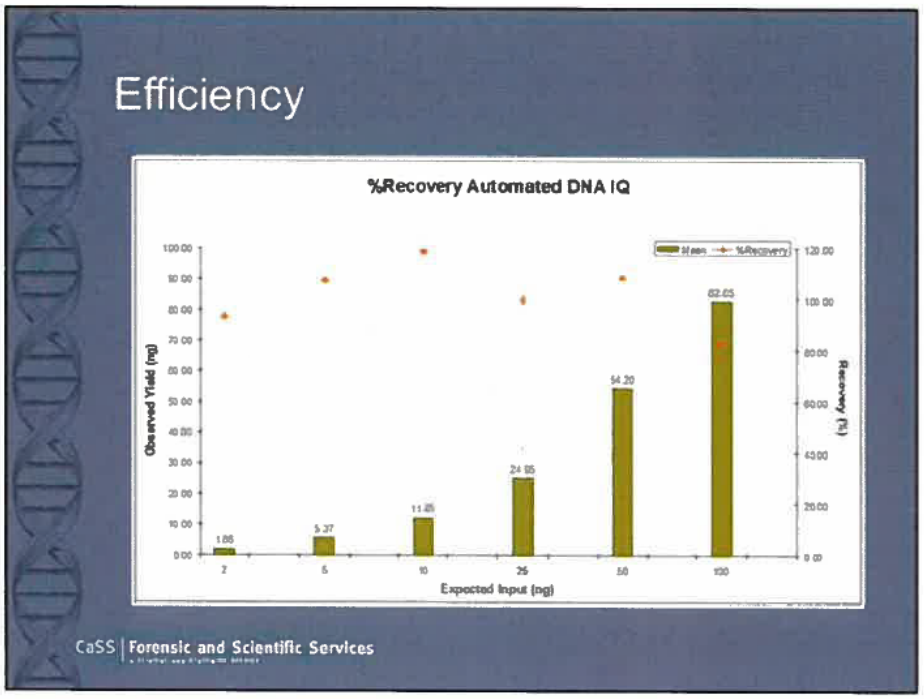
Date: 7 / 10 / 2023

134. The Presentation:

(a) stated that manual mixing of the lysis buffer with the resin beads (see paragraph 124h above) is important for improving DNA '*this mixing of the resin is KEY to improving the DNA recovery*',

(b) stated '*the changes have caused an increase in efficiency and recovery of DNA*', and

(c) a figure in the presentation illustrated that the percentage recovery of DNA was high (as shown below).



135. I was not provided with the validation report for the 2009 Method at the time I prepared the Contamination Report and therefore could not review it.

136. The various documents I received indicated that the 2009 Method was validated over an extended period of time from sometime around mid-2008 until mid-2009. This meant that the MPII automated method was not reimplemented until 20 August 2009.

137. As I was not provided with the specific data used to validate the 2009 Method or the validation report, in the Contamination Report, at paragraph 61 I wrote:

> ***If*** *the amended methods have been demonstrated through validation/verification to operate as expected and produce reliable and reproducible results, then they can be considered suitable for implementation and use.*
>
> (my emphasis added)

138. As indicated above, on the face of the documents I was provided for the Contamination Report (see paragraphs 130-134 above), I believed that the DNA Yield Issue had been improved. Although I did not have any specific data for the 2009 Method (or the validation report) to [redacted] whether that method had improved the DNA Yield Issue, the

[redacted]

[redacted]

Date: 17 / 10 / 2023

changes that had been made between the Project 13 method and the 2009 Method, particularly the use of a manual lysis step and method changes, in my experience would have resulted in an improvement in yield. This is particularly evident from the information contained in the presentation.

139. In my opinion, the 2009 Method was based on a significantly different method than that implemented through Project 13 (version 1 of SOP 24897). I do not believe it is scientifically valid to extrapolate the Project 13 results beyond version 1 of that method.

140. The differences between the 2007 and 2009 methods were significant such that the results from the method implemented following Project 13 could not be used to infer the performance of the 2009 Method. Therefore, I did not make comments that would apply beyond the period of the documentation I reviewed, or which could not be supported by the material I had received.

141. My answers in the Contamination Report otherwise reflect my instructions to consider various matters in the context of "*issues* [that] *arose in and around 2008*", i.e. the Contamination Issue.

142. Therefore, my comment in paragraph 71 of the Contamination Report "*I did not find any significant failings that would indicate that the final results released were not reliable*" relates to the investigation of the Contamination Issue in around 2008. I note that this statement was included in the draft of the report I provided to Counsel Assisting late on the 19th of October 2022 when I had not yet addressed the "verification" of Project 13.

143. Paragraph 70 of the Contamination Report provides further context to this response. It states:

> *Question 4. If any deficiency in the methods, systems or processes for use of the DNA IQ instrument or the resolution of the issue that arose in and around 2008 is found, the impact of that deficiency on:*
>
> ...
>
> (b) *Whether DNA profiles obtained by the laboratory are reliable and accurate.*
>
> *QHFSS completed an extensive review of the results generated from the DNA IQ method 2007-2008. Given the amount of work conducted and the thoroughness of the work, once this was completed, the remaining results that have undergone the relevant quality assurance checks, including the checking of relevant control samples (e.g. extraction reagent black, positive and negative controls), could be considered reliable and accurate.*

144. I did see the results in figures 9-12 of Project 13 and recall discussing these results with the COI during the time I assisted the COI; however not having the empirical design meant it was difficult to assess the full cause of the DNA Yield Issue, as outlined earlier herein. I also understood issues with DNA yield for the DNA IQ method had been brought to the attention of the COI by Dr Budowle in his 15 September 2022 report.

145. As outlined in paragraphs 103-113, I identified numerous other issues with the project report. In my scientific opinion I thought it was more scientifically sound to raise an issue with the project and project report as a whole, which I did when I advised that Project 13 was "*not consistent with expected good practice*".

[redacted]

[redacted]

Witnes

Dated 27 / 10 / 2023

EXHIBIT INDEX

Exhibit	Document	Date	Pages
LWW-1	Curriculum Vitae of Adjunct Professor Wilson-Wilde		30-37
LWW-2	List of current changes at FSQ		38-41
LWW-3	Email from Counsel Assisting	16.09.2022	42-43
LWW-4	Email from Counsel Assisting and proposed letter of instruction	21.09.2022	44-47
LWW-5	Email from Counsel Assisting	23.09.2022	48-50
LWW-6	Email from COI	06.10.2022	51-52
LWW-7	Amended letter of instruction to expert	12.10.2022	53-55
LWW-8	Draft Contamination Report marked up by COI	17.10.2022	56-62
LWW-9	Emails with COI and Counsel Assisting	12.10.2022-18.10.2022	63-69
LWW-10	Email from Counsel Assisting, received at 6.30pm	18.10.2022	70-71

[redacted]

Date: 24 / 10 / 2023

[redacted]

Wit

Date: 27 / 10 / 2023

Exhibit	Document	Date	Pages
LWW-11	Draft Contamination Report marked up by COI	20.10.2022	72-91
LWW-12	Emails with Counsel Assisting	20.10.2022	92-106
LWW-13	List of material for Contamination Report	20.10.2022	107-114

[redacted]

Date: 27 / 10 / 2023

[redacted]

LWW-1

Curriculum Vitae

Adjunct Professor Linzi Wilson-Wilde OAM

A strategic thinker and proven high achiever with a demonstrated understanding of the law enforcement and government operating environments (State and Federal). Strong leadership networks nationally and internationally. In demand as an advisor and collaborator. A strong background in delivering policy, legislation and quality operational services. A recognised data orientated decision maker, well respected in the forensic and law enforcement communities.

Qualifications

Doctor of Philosophy
University of Canberra 2011

Postgraduate Diploma of Science
La Trobe University 1996

Bachelor of Science Degree
La Trobe University 1995

Current Positions

Forensic Science Queensland
Position: Chief executive Officer 2023 onwards

Chief Executive Officer of a new forensic agency, responsible for building a world leading forensic laboratory whilst implementing the recommendations from the Commission of Inquiry into DNA Testing in Queensland. To facilitate this developed a Strategic Plan and working with staff to develop a values statement.

Secured additional funding to support the implementation of the COI recommendations, including additional accommodation, an innovation budget, a quality budget to increase proficiency testing, and new state of art equipment.

Implemented a new governance reporting framework, project approval framework, leadership training framework, new branding, outsourcing process, in-depth scientific reviews, DNA interpretation training, and transparent communication mechanisms.

Flinders University, College of Science and Engineering: Adjunct Professor - Honorary position

Leverhulme Research Centre for Forensic Science, Dundee University: Honorary Fellow - Honorary position

Awards/Recognition

2022 John Harbour Phillips Award – For sustained excellence to forensic science

2021 Victoria Police Service Medal – Ten-year service, Victoria Police

2019 University of Canberra Distinguished Alumni Science and Technology

2017 W.R. Hebblewhite Medal, Standards Australia (recognises exceptional and dedicated contributions in standardisation nationally and internationally).

2014 Inductee into the Victorian Honour Roll of Women.

2010 National Managers Certificate – Recognition of work excellence, AFP.

2009 National Managers Group Certificate – Operation Observe, AFP.

2003 Medal in the Order of Australia. For service as part of the police joint Bali bombing investigation and victim identification process, known as Operation Alliance.

2003 Operations Medal – Operation Alliance, AFP.

2002 Directors Certificate – Operation TOMO, NSW Police.

Contact Information

[redacted]

[redacted]

Professional memberships

Member of the Australian and New Zealand Forensic Science Society.
Current position: member.
Past positions held: President of the Australian Capital Territory branch, Committee member of the New South Wales branch and Secretary and Treasurer of the Victoria branch.

Member of the Australian Academy of Forensic Science.
Current position: Vice President National Committee.

Career History

Forensic Science SA (FSSA)
Position: Director FSSA 2021-2023

As part of the Attorney-General's Department (AGD) South Australia, I was responsible for the development, coordination and implementation of strategies to ensure FSSA met appropriate ethical, professional and quality standards in the provision of forensic services. I provided leadership and management oversight in developing innovative approaches to scientific issues. Met business objectives, fostering a team approach.

Delivered a new three-year Strategic Plan and Innovation Roadmap for service delivery over the next 10 years Managed financial and human resources through implementation of a new financial accountability framework, realised significant financial savings, and a successfully bid for significant additional funding for FSSA.

Provided advice to the Minister, AGD Chief Executive and AGD Corporate Executive on forensic science matters. Established strong effective relationships with the judiciary, the Coroner, the Director of Public Prosecutions, police and defence, as well as national and international counterparts and academic institutions.

Australia New Zealand Policing Advisory Agency (ANZPAA) National Institute of Forensic Science (NIFS)
Position: Director NIFS 2015-2021

Developed the strategic direction for the Institute. Implemented a new operational framework, created a new governance structure, attracted significant (40%) additional ongoing funding, implemented a 3-year rolling Strategic Plan, coupled to an annual Business Plan and established a quarterly reporting framework. Created increased transparency and accountability for NIFS and its groups, aligned to stakeholder needs, increasing value.

Refreshed the NIFS branding, implemented a transparent budgeting model and redesigned all reporting to the laboratory Directors and Police Commissioners. Revitalised the Certification body AFSAB, reducing risk to NIFS' and its stakeholders, increasing confidence in the services.

Completed the implementation of the NIFS Review. Completed a foundational review of the Institute. Reviewed the status of forensic science in Australia and New Zealand and created a Research and Innovation Roadmap for future investment via the creation for a Research and Innovation Strategy. Lead a 44-country ISO consortium in the development of international standards for forensic science and reviewed national service delivery in fingerprints and drug analysis to reduce analysis times and cost.

Developed and implemented the Engender Change program to promote diversity and inclusion in forensic science.

Australia New Zealand Policing Advisory Agency (ANZPAA) National Institute of Forensic Science (NIFS)
Position: General Manager NIFS 2008-2015

Managed the Institute, providing leadership and strategic direction. Managed the integration of the Institute into ANZPAA. Managed major research and development projects, including Forensic Science Standards (National and International), Peroxide Explosive Detection, Ballistics National Training Curricula Review, Rapid DNA, Next Generation Sequencing and NIFS Review Implementation. Provided the daily management of the Institute, including budgets, systems and programs and supervision of NIFS team members, secondees and interns.

Managed the development of policy for the Institute, jurisdictional and nationals environments, including Familial Searching, Predictive DNA testing, New Psychoactive Substances, CCTV guidelines and Digital Imaging Guidelines.

Additional Information

Law enforcement security clearance to Negative Vetting 2.

PRINCE2 project management qualification (foundation level).

Previously First Aid Trained to level 2.

Career History

Coordinated information transfer and the development of forensic science disciplines on a national level, including the Chemical Warfare Agent Laboratory Network (CWALN), ANZPAA Disaster Victim Identification Committee (ADVIC) and the Australasian Field Forensic Science Accreditation Board (AFFSAB). Managed the Specialist Advisory Group and Workshop Programs.

Australian Federal Police, Forensic Services
Position: Project Officer, Science and Technology Strategic Unit 2006-2010

Developed the Science and Technology Strategic Plan and the Science and Technology Business Plan for the whole of agency AFP. Developed the Concept of Operations for the creation of a Science and Technology Strategic Unit, which was later implemented. Also played a lead role in the development and evaluation of science and technology practices AFP wide.

Led and managed specific science and technology related projects and facilitated and maintained the AFP science and technology research and development program. Also acted as Coordinator of the unit at the inception of the unit.

Australian Federal Police, Forensic Services
Position: Team Leader of the Biological Criminalistics Team 2002-2006

Led the team, implemented new DNA processes and software to streamline and improve DNA turnaround times. Led the agency to gain its first accreditation in Bloodstain Pattern Analysis.

Coordinated the DNA analysis of all samples involved in the disaster victim identification and criminal investigation of the Bali Bombing in October 2002, for which I received a Medal in the Order of Australia.

Involved in the drafting of legislation to aid the analysis of DNA samples for the Bali bombing and assisted the review committee in the subsequent review of the legislation.

AFP representative to the Biology Special Advisory Group (BSAG) coordinated by the National Institute of Forensic Science. BSAG representative for the DNA Users Advisory Group for CrimTrac (the body responsible for the National DNA Database).

Coordinator Laboratory Services (Biology, Chemistry, Documents, AV) – 15th April 2005 to 9th June 2005 and 6th October 2005 to 28th February 2006.

New South Wales Police, Forensic Services Group
Position: Forensic DNA Specialist 2000-2002

Responsible for the use of DNA analysis in the investigation of high profile and unsolved cases and training within NSW Police in all aspects of DNA analysis.

Established the method of collecting DNA samples (and training police officers, the collection of DNA samples, storage and transport to the laboratory) in the mass DNA screen in the town of Wee Waa. This method became the established standard in most states and territories in Australia.

Involved in the drafting of the NSW Forensic Procedures legislation and provided evidence to the Parliamentary Standing Committee on Law and Justice in the review of the legislation.

Served on the Working Group on Law Enforcement and Evidence for the Australian Law Reform Commission Report into the Protection of Human Genetic Information, released in 2003

Media Examples

ABC Radio Adelaide – 24 April 2021 – Somerton Man case (begins at 1:15)
https://www.abc.net.au/radio/adelaide/programs/breakfast/breakfast/13309162

ABC news – April 2021 – Somerton man case
https://www.abc.net.au/news/2021-04-24/mysterious-somerton-man-to-be-exhumed-by-sa-police/100092750

Adelaide Advertiser – 4 April 2021 – Feature article
https://www.adelaidenow.com.au/news/south-australia/dna-expert-dr-linzi-wilsonwilde-also-a-role-model-for-women-in-the-field/news-story/5ba5af9128c93d3f5cb966264798bfd2

Adelaide Advertiser – 3 December 2020 – FSSA Director position announcement
https://www.adelaidenow.com.au/news/south-australia/worldrenowned-dna-expert-dr-linzi-wilsonwilde-to-head-forensic-science-south-australia/news-story/10d6359fc5a82e83f9239e86d8b8fcd2

ABC Local Radio – 21 October 2016 – Overnights talkback segment regarding DNA profiling
http://www.abc.net.au/radio/programs/overnights/dna/7956818

4BC – 24 July 2014 – Discussion regarding MH17 and Disaster Victim Identification
http://www.4bc.com.au/blogs/2014-4bc-mornings-audio-blog/mh17-forensic-insight/20140724-3chaw.html

ABC News - 22 September, 2012 7:59pm AEST – Regarding ANZFSS International forensic science symposium
http://www.abc.net.au/news/2012-09-22/international-forensic-symposium/4275690

ABC July 2012 – Discussion regarding the Chamberlain case
http://www.abc.net.au/news/2012-07-09/forensics-in-the-spotlight/4118518

4BC - 19 June, 2012 - 2:47 PM – Discussion regarding DNA evidence
http://www.4bc.com.au/blogs/4bc-blog/dna-evidence/20120619-20lic.html

4BC – May 2012 – Discussion regarding the Baden Clay case
http://www.4bc.com.au/BadenClay

ABC TV 7:30 Report – November 2010 - CSI for Wildlife
http://www.abc.net.au/7.30/content/2010/s3061809.htm

Career History

Victoria Police, Victoria Police Forensic Science Centre, Biology Division
Position: Case-Reporting Scientist 1996-2000

Trained in: Crime Scene Analysis, DNA Analysis, Evidence Recovery, Case Management, DNA Statistics, Hair and Fibre Analysis, Damage Analysis, Blood Stain Pattern Interpretation.

Validated the Profiler Plus System for DNA Analysis.

Trained Scientists in: Chelex DNA extraction, DNA Quantitation using the Quantiblot method, Electrophoresis using the ABI 377 sequencer and interpretation of DNA profiles using Genotyper Software.

Deployed to Vietnam to train scientists in the method and use of DNA profiling.

Government-Based Committees

Interpol Forensic Science Managers Symposium Committee
Position: Committee Member 2019 to current.

International Organization for Standardization (ISO) – Technical Committee – TC 272 - Forensic Sciences
Position: Committee Chair 2013 to current.

Standards Australia - Committee – CH-041 Forensic Analysis
Position: Committee Chair 2016 to current. Previous: Committee Member 2011 to 2016.

International Criminal Court (ICC), Office of the Prosecutor Scientific Advisory Board
Position: Vice Chair 2019 to current. Previous: Committee Member (International Forensic Strategic Alliance Representative) 2016 to 2019.

Australian Criminal Intelligence Commission (ACIC) – Law Enforcement Information Systems Capability Committee (LEISCC)
Previous position: Committee Member – (ANZPAA Observer) 2018 to2021.

ANZPAA John Harber Phillips Award Committee
Previous position: Committee Chair 2014 to 2021.

CrimTrac (now ACIC) – Strategic Issues Group (CrimTrac SIG)
Previous position: Member (ANZPAA Observer) 2012 to 2016.

Senior Managers of Australia and New Zealand Forensic Science Laboratories (SMANZFL)
Previous position: Ex-officio Committee Member and International Liaison Officer 2015 to 2016.

Standards Australia - Committee – CH0-39 Body Fluids
Previous position: Committee Member 2014 to 2016.

CrimTrac (now ACIC) – National DNA Investigative Capability (NDIC) Evaluation Committee
Previous position: Member 2014 to 2015.

CrimTrac (now ACIC) – National Criminal Investigation DNA Database Users Advisory Group (NCIDD UAG)
Previous position: Member 2008 to 2014. Held positions on various advisory committees for CrimTrac since 2000.

Senior Managers of Australia and New Zealand Forensic Science Laboratories (SMANZFL) - Biology Specialist Advisory Group (BSAG)
Previous position: Member 2000 to 2006.

Australian Law Reform Commission (ALRC) - Working Group into the Protection of Human Genetic Information
Previous position: Working Group Member 2002 to 2003.

Non-Government-Based Committees

International Forensic Strategic Alliance (IFSA)
Position: President 2019- current. Previous: Member (ANZFEC Representative).

International Association of Forensic Science (IAFS) 2020 Symposium Advisory Committee
Position: Committee Member 2017 to current.

Australian Academy of Forensic Science (AAFS) National Council
Position: Vic President. National Council Member 2019 to 2022.

Deakin University – School of Life and Environmental Sciences Forensic Sciences Advisory Board
Previous position: Member 2012 to 2016.

National Association of Testing Authority (NATA) - Forensic Science Accreditation Advisory Committee (FSAAC)
Previous position: Member 2012 to 2016.

International Society for Forensic Genetics (ISFG) - Organising Committee for the 2013 World Congress
Previous position: Vice President, Chair of the Scientific Committee 2011 to 2013.

Community Board – John Street Early Childhood Cooperative
Previous position: Chair of Board 2010 to 2012.

Australia New Zealand Forensic Science Society (ANZFSS)
Australian Capital Territory Branch Committee Position: President and Member 2002 to 2006.
Victorian Branch Committee Position: Treasurer, Secretary and Member 1997 to 2000.
New South Wales Branch Committee Position: Member 2000 to 2002.
Discipline Chair for Management and Quality for the 2018 ANZFSS Symposium
Discipline Chair for Science and Justice for the 2014 ANZFSS Symposium.
Discipline Co-Chair for Wildlife Forensics and Entomology for the 2010 ANZFSS Symposium.

Publications

Wilson-Wilde, L. (In Press). Misinterpretation and fallacies in forensic evidence. In *Forensic & Legal Medicine. Eds Payne-James, J. and Byard, R.* Chapter 112.

Wilson-Wilde, L. (2021). The merits of women. *Australian Journal of Forensic Sciences*, 53(4), 373-377.

Wilson-Wilde, L. (2021). A new era for NIFS. *Australian Journal of Forensic Sciences*, 53(3), 253-255.

Wilson-Wilde L. (2021) The State of Forensic Science in Australia and New Zealand. *Forensic Science Review* 3, 1 *In Press.*

Ballantyne, K. N., and Wilson-Wilde L. (2020) Assessing the reliability and validity of forensic science–an industry perspective. *Australian Journal of Forensic Sciences* 52, 3, 275-281.

Bruenisholz, E., Vandenberg, N., Brown, C. and Wilson-Wilde, L. (2019) Benchmarking Forensic Volume Crime Performance in Australia between 2011 and 2015. *Forensic Science International: Synergy.* 1, 86-94.

Bruenisholz, E., Wilson-Wilde, L., Delémont, O. and Ribaux, O. (2019) Deliberate fires: from data to intelligence. *Forensic Science International,* 301, 240-253.

Wilson-Wilde, L., Romano, H. and Smith, S. (2019) Error rates in proficiency testing in Australia. *Australian Journal of Forensic Sciences,* https://doi.org/10.1080/00450618.2019.1569154.

Publications

Ward, J., Johnson, R. and Wilson-Wilde, L. (2019) Gender equity: How do the forensic sciences fare? *Australian Journal of Forensic Sciences,* https://doi.org/10.1080/00450618.2019.1568556.

Morgan R. and Wilson-Wilde, L. (2019) Assessment of the Potential Investigative Value of a Decentralised Rapid DNA Workflow for Reference DNA Samples, *Forensic Science International,* 294, 140-149.

Kelty, S. F., Julian, R., Bruenisholz, E. and Wilson-Wilde, L. (2018). Dismantling the justice silos: Flowcharting the role and expertise of forensic science, forensic medicine and allied health in adult sexual assault investigations. *Forensic Science International*, 285, 21-28.

Wilson-Wilde, L. (2018). The International Development of Forensic Science Standards—A Review. *Forensic Science International,* 288, 1-9.

Wilson-Wilde, L. (2018). Invited Editorial Australasian Forensic Science Summit 2016. *Australian Journal of Forensic Sciences*, *50*(3).

Wilson-Wilde, L. and White, J. (2018). Australasian Forensic Science Summit 2016: external environments towards 2030. *Australian Journal of Forensic Sciences*, *50*(3), 275-281.

Wilson-Wilde, L., Smith, S. and Bruenisholz, E. (2017). The Analysis of Australian Proficiency Test Data over a Ten-Year Period. *Forensic Science Policy & Management: An International Journal*, *8*(1-2), 55-63.

Bruenisholz, E., Delémont, O., Ribaux, O. and Wilson-Wilde, L. (2017). Repetitive deliberate fires: development and validation of a methodology to detect series. *Forensic Science International*. 277, 148-160.

Wilson-Wilde, L. and Pitman F. (2017) Legislative and Policy Implications for the use of Rapid DNA technology in the Australian context. *Forensic Science Policy and Management*. 8(1-2), 26-3.

Wilson-Wilde, L. (2017) Invited Editorial - The Future of the National Institute of Forensic Science – Implications for Australia and New Zealand. *Australian Journal of Forensic Sciences* 49 1-8.

Wilson-Wilde, L.., Yakovchytsb, D., Neville, S., Maynardb, P. and Gunn P. (2016) Investigation into Ethylene Oxide Treatment and Residuals on DNA and Downstream DNA Analysis. *Science and Justice,* 57(1), 13-20.

Johnson, R. N., Wilson-Wilde, L. and Linacre, A. (2014). Current and future directions of DNA in wildlife forensic science. *Forensic Science International: Genetics*, *10*, 1-11.

Bright, J. A., Allen, C., Fountain, S., Gray, K., Grover, D., Neville, S. and Wilson-Wilde, L. (2014). Australian population data for the twenty Promega PowerPlex 21 short tandem repeat loci. *Australian Journal of Forensic Sciences*, *46*(4), 442-446.

Taudte, R. V., Beavis, A., Wilson-Wilde, L., Roux, C., Doble, P. and Blanes, L. (2013). A portable explosive detector based on fluorescence quenching of pyrene deposited on coloured wax-printed µPADs. *Lab on a Chip*, *13*(21), 4164-4172.

Robertson, J., Kent, K. and Wilson-Wilde, L. (2013). The development of a core forensic standards framework for Australia. *Forensic Science Policy & Management: An International Journal*, *4*(3-4), 59-67.

Brandi J. and Wilson-Wilde L. (2013) Standard Methods. In: Siegel JA and Saukko PJ (eds.) *Encyclopedia of Forensic Sciences, Second Edition, vol. 3, pp. 522-527. Waltham: Academic Press*.

Wilson-Wilde, L. M., Brandi, J. and Gutowski, S. J. (2011). The future of forensic science standards. *Forensic Science International: Genetics Supplement Series*, *3*(1), e333-e334.

Wilson-Wilde, L., Norman, J., Robertson, J., Sarre, S. and Georges, A. (2011). Australian marsupial species identification. *Forensic Science International: Genetics Supplement Series*, *3*(1), e543-e544.

Publications

Wilson-Wilde L. and and Kogios R. (2011) "DNA Profiling in Criminal Investigations" in *Expert Evidence, Freckelton and Selby (eds), Chapter 80*Wilson-Wilde, L. (2010). Combating wildlife crime. *Forensic science, medicine, and pathology*, *6*(3), 149-150.

Wilson-Wilde, L. (2010). Wildlife crime: a global problem. *Forensic science, medicine, and pathology*, *6*(3), 221-222.

Wilson-Wilde, L., Norman, J., Robertson, J., Sarre, S., and Georges, A. (2010). Current issues in species identification for forensic science and the validity of using the cytochrome oxidase I (COI) gene. *Forensic science, medicine, and pathology*, *6*(3), 233-241.

Wilson-Wilde L OAM "DNA Profiling in Criminal Investigations" (2005) in *Expert Evidence, Freckelton and Selby (eds), Chapter 80 pages 80-51.*

McNevin, D., Wilson-Wilde, L., Robertson, J., Kyd, J., and Lennard, C. (2005). Short tandem repeat (STR) genotyping of keratinised hair Part 2. An optimised genomic DNA extraction procedure reveals donor dependence of STR profiles. *Forensic science international*, *153*(2), 247-259.

McNevin, D., Wilson-Wilde, L., Robertson, J., Kyd, J., and Lennard, C. (2005). Short tandem repeat (STR) genotyping of keratinised hair: Part 1. Review of current status and knowledge gaps. *Forensic science international*, *153*(2), 237-246.

Wilson-Wilde, L. M., van Oorschot, R. A., and Mitchell, R. J. (1997). Genetic diversity at six short tandem repeat loci within the state of Victoria, Australia. *Electrophoresis*, *18*(9), 1592-1597.

Papers Presented at Scientific Meetings (last 7 years)

Andresen, K, Williams, C, Wilson-Wilde, L, Taylor, D. AI and Machine Learning for DNA Evidence: addressing the practical and legal issues. Presented to the ANZFSS 25th International Symposium on the Forensic Sciences, Brisbane 2022.

Wilson-Wilde L. Global collaboration through the International Forensic Strategic Alliance (IFSA). Presented to the Crime Scene Investigators Korea Conference 2022, Virtual, 2022.

Wilson-Wilde L. Global Collaboration Efforts in the Standardisation of Forensic Science. Presented to the Symposium on Forensic Theory and Practice. Virtual, 2021.

Wilson-Wilde L. Locard Leadership. Presented to the Leverhulme Research Centre on Forensic Centre Annual Lecture, Virtual, 2022.

Wilson-Wilde L. Diversity and Inclusion in Forensic Science – the journey. Presented to the Australian Society of Document Examiners Conference, Virtual, May 2021.

Wilson-Wilde L. The Future of Forensics in a Post COVID Era. Presented to the Australian Academy of Forensic Science, Virtual, December 2020.

Wilson-Wilde L. The Future of Forensic Science Standards. Presented to Crime Scene Investigators Korea 2020 Conference, Virtual, October 2020.

Wilson- Wilde L. The Forensic Landscape. Presented to the Australian Forensic Science Society Meeting, Hobart 2020.

Wilson-Wilde L. and Ballantyne K. Assessing the reliability and validity of expert evidence – An industry perspective. Presented to the Australian Academy of Forensic Science Summit, Melbourne 2019.

Wilson-Wilde L. An Update on Strengthening Forensic Science in the United States: A Decade of Development – an Australian viewpoint. Presented to the National Academy of Sciences Symposium, Washington DC 2019.

Gould T, Gidley A, Wilson-Wilde L. Australasian forensic field sciences accreditation board development and future direction. Presented to ANZFSS 24th International Symposium on the Forensic Sciences, Perth 2018.

Papers Presented at Scientific Meetings (last 6 years)

Morgan R, Wilson-Wilde L. Blind assessment of the Parabon® snapshot™ DNA phenotyping service. Presented to ANZFSS 24th International Symposium on the Forensic Sciences, Perth 2018.

Thompson M, Tangen J, Searston R, Edmond G, Eva K, Osborn S, McCarthy D, Hayes R, Wilson-Wilde L, Byard G, Raymond J. Creating the next generation of perceptual experts in Australia's policing and security agencies. Presented to ANZFSS 24th International Symposium on the Forensic Sciences, Perth 2018.

Ward J, Johnson RN, Wilson-Wilde L. Gender equity: how do the forensic sciences fair? Presented to ANZFSS 24th International Symposium on the Forensic Sciences, Perth 2018.

Wilson-Wilde L. Shaping the future of forensic science. Presented to the Aikenhead Centre for Medical Discovery Research Week, Melbourne 2018.

Wilson-Wilde L. Science and technology challenges and opportunities: forensic science. Presented to CIVSEC, Melbourne 2018.

Wilson-Wilde L. Predictive DNA. Presented to the Police Conference, Melbourne 2018.

Wilson-Wilde L. International efforts to develop standardisation in forensic science. Presented to the Japanese Association of Forensic Science and Technology Conference Tokyo, Japan 2017.

Wilson-Wilde L. The National Institute of Forensic Science. Plenary presentation to the Error Management Symposium, Washington USA 2017.

Wilson-Wilde L. The new forensic landscape in Australia and New Zealand and the National Institute of Forensic Science. Presented to the International Association of Forensic Science, Toronto, Canada 2017.

LWW-2

Achievements to date for Adjunct Professor Linzi Wilson-Wilde OAM since joining Forensic Science Queensland

I joined Forensic Science Queensland (FSQ) on 16 January 2023 as Chief Executive Officer (CEO).

Initially my work was focused on:

- Setting up the leadership team
- Setting up the corporate infrastructure
- Development of Strategic Plan
- Understanding the scientific processes through case reviews

In addition to the implementation of the COI recommendations, through all-staff forums, workshops, group and individual meetings, and consultation with the FSQ Leadership Group, a number of immediate priorities were identified across four strategic themes:

- People and culture
    - Building FSQ as a strong business unit within Queensland Health, prior to transfer to the Department of Justice and Attorney General
    - Recruiting to key/critical positions
    - Creating a positive workplace culture which promotes openness to change and a safe and effective working environment
    - Promoting a transformative, positive quality culture
- Infrastructure
    - Providing fit for purpose laboratory and office environments consisting with national standards
    - Delivering scientific equipment to support capabilities
    - Ensuring contemporary IT equipment and software to facilitate service provision
- Process foundations
    - Reviewing forensic processes and methodologies to ensure they are contemporary, valid, and reliable
    - Streamlining processes to deliver timely results whilst maximising evidence and maintaining quality
- Science innovation
    - Building forensic capabilities within staff and across the organisation
    - Fostering an innovative culture that stays abreast of contemporary practice
    - Partnering with academia to drive operationally relevant research.

The COI recommendations represent only a small portion of the work required to establish FSQ. The following pages highlight the achievements realised to date.

People and culture

Establishing the Business Unit

A Business Case for Significant Change (BCfSC) (Phase 1) was conducted to create FSQ as an entity within QH and bring the existing staff within the governance of FSQ under the Chief Executive Office position. The BCfSC also created a number of scientific and support positions and created the Case Review, Innovation and Quality teams.

A BCfSC phase 2 was conducted to reorganise the Forensic Biology area and add additional scientific and support positions.

A large-scale recruitment process continues with the following leadership positions recruited: Manager Biology, Manager Innovation, Manager Quality, Manager Corporate, Deputy Manager Biology, Deputy Manager Innovation, and a number of Team leaders. Also, 36 scientific and 8 support additional positions have been filled.

To support the development of a strong leadership team, a leadership development framework has been developed and implemented, with the first round of training completed. In addition, a Performance Framework has been developed and introduced, which is being implemented through all levels of staff.

A Forensic Science Queensland Strategic Plan 2023-27 has been developed and approved. The Strategic Plan has been developed in consultation with staff and stakeholders. This has been designed in line with the new branding and style guide developed. Approval for a FSQ independent public website have been granted and the Strategic Plan will be placed on the website. An FSQ values statement have been developed in consultation with staff and is in the final design stage prior to release. The values statement is an important tool in resetting culture.

Additional work to empower staff and create a supportive and positive culture includes hiring a Director Wellbeing and Culture to work with staff and morning CEO drop-ins for staff to informal discuss issues/thoughts/ideas/concerns with the CEO. This is also supported through increased communication pathways such as monthly staff meetings, fortnightly newsletters, and informal walk arounds to increase visibility relationships with staff and transparency in leadership.

Science

On of the first things I did when I arrived at FSQ was to look at the processes and science through the case review process. I identified that there were numerous inconsistencies with generally accepted practice for the interpretation of DNA profiles. I felt this urgently needing addressing. I organised a workshop with three interstate leading experts which began the fundamental changes required. This led to internal workshops on DNA interpretation, mentoring and two externally run STRmix™ workshops (the DNA interpretation software). I have rebuilt the fractured relationship with the STRmix™ team and negotiated a support agreement. The training has led to the development and implementation of new DNA interpretation guidelines, which were developed in consultation with staff and independently reviewed by interstate leading experts prior to implementation. This has led to a significant increase in reportable results which is having a significant on investigations.

Not stopping with the COI recommendations, I have conducted in-depth reviews for the Evidence Recovery and DNA Analysis sections in Forensic Biology and Illicit drugs and Clandestine Laboratory

Analysis in Forensic Chemistry. This has led to additional recommendations for improvements to the methods and processes and which are also being implemented. The reports from the in-depth reviews were verbally presented to the Interim Advisory Board at their meeting in August so that they are aware of new and emerging issues and the reports themselves are also due to be forwarded.

To support the revalidation or introduction of new methods, a new project proposal process has been implemented. This process includes the development of an empirical study matrix using a developed template. Each project proposal must include an empirical study matrix which is important to ensure the correct methodology for the project is in place (and all variable are correct tested). All significant project proposals and empirical study matrices must be reviewed and approved by an independent interstate expert in the area of study prior to commencement. The resulting project reports must also be reviewed prior to approval sign off and method implementation.

A new quality framework is in development and a new scientific quality forum will commence in November. This will provide a venue for scientists to raise issues and have scientific debate. Work is underway to create a positive proactive quality culture.

Work is underway to develop and implement a YSTR testing method. It is anticipated that the new method will be implemented in the first quarter of 2024. A PhD student is assisting with this project. Additionally, an agreement has been put in place to purchase 20% of a researchers time to assist with validation projects.

Processes Foundations

I have ceased all methods and processes that required stopping (including scraping and bone analysis) and conducted a high-level gap analysis for methods against appropriate validation projects. This work is continuing.

A number of revalidation projects have been completed. This includes the quantitation Limit of Detection.

A case review team has been established to review historical cases and is also playing a role in proving communication between stakeholders and the scientists. We have seen a vast improvement in our relationship with the Queensland Police Service (QPS) and QPS have increased their imbedded team at FSQ. We are also having meetings with the courts and the Office of the Director of Public Prosecutions.

In order to increase capacity, we have established outsourcing of services including YSTR analysis to New Zealand Laboratory Environmental Science and Research Institute (ESR), bone to the Australian Federal Police (AFP), volume crime DNA interpretation to two laboratories in the UK, serious crime DNA interpretation to local and interstate DNA experts.

A third reporting team has been established to focus on volume crime.

We are working with the courts to develop annexures to provide more information on the methods used at FSQ, including any known limitations and controversies. The annexures are designed based on the Practice Direction used in Victorian Courts. The Forensic Biology annexures have been drafted.

The development of revised, contemporary, fit for purpose Sexual Assault Investigation Kits (SAIKs) – now called Forensic Medical Examination Kits (FMEKs). The FMEKS comprise modular kits for the medical examination collection, toxicology collection and clothing collection. The critical components of the kits (swabs and reference sample collection device) have been appropriately validated prior to implemented.

Infrastructure

The FSQ governance infrastructure has been implemented with the Interim Advisory Board and three Advisory Subcommittees: Forensic Biology, Forensic Justice and Forensic Medical Examination having met.

A full audit of existing laboratory and non-laboratory facilities has been undertaken across both the Forensic Biology and Forensic Chemistry disciplines. A number of areas for improvement have been identified to enhance the delivery of forensic services and minimise contamination risks.

It was identified that additional funding would be required to build the infrastructure required to establish FSQ as a world-leader. A submission was developed and presented to Government with subsequent additional funding granted for the purchase of new scientific equipment (for both Forensic Biology and Forensic Chemistry), a dedicated innovation budget, a dedicated quality budget, funding for increased testing, and laboratory upgrades. Negotiations have commenced to improve the functionality of the Laboratory Information Management System (LIMS) in Forensic Biology (called the “Forensic Register”). The changes to the LIMS include the tools required to implement a case management approach.

Funding has also been provided for additional accommodation to house the additional staff. An annexure has been designed and is currently being built. It is anticipated the annexure will be ready late December 2023 to mid-January 2024.

Work has also commenced on the development of a business case for government to consider a new purpose-built forensic facility.

LWW-3

Fletcher, Caitlin [redacted]

From: Linzi Wilson-Wilde <[redacted]>
Sent: Monday, 9 October 2023 12:26 PM
To: Linzi Wilson-Wilde
Subject: Fwd: Potential further task - DNA IQ contamination

Follow Up Flag: Follow up
Flag Status: Completed

Begin forwarded message:

From: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
Subject: Potential further task - DNA IQ contamination
Date: 16 September 2022 at 10:25:45 am AEST
To: Linzi Wilson-Wilde <[redacted]>
Cc: Jac Thong <jac.thong@dnainquiry.qld.gov.au>

Dear Linzi

I am writing to see if you have the capacity and willingness to take on a further task for the Commission.

Issue

The DNAIQ instrument developed by Promega was utilised at FSS. In and around 2008, it was discovered that the seals from the DNAIQ products (consumables) in the extraction phase were leading to cross-contamination amongst different, unrelated samples. The issue was documented in various OQIs. It resulted in one case in a victim of one offence being identified as a possible offender in another sample. Once the laboratory discovered the issue, there was a retrospective assessment of all the samples that were processed with the relevant consumables. The issue affected many batches of samples and significant work was required to rectify the issue. The FSS was required to send out correspondence to the Queensland Police Service, the Officer of the Director of Public Prosecutions and the Courts about the issue.

Instructions

In summary, the instructions for the task would be to advise on:

- Whether the methods, systems and processes in relation to the above two issues were consistent with international best practice when the issue arose;
- Whether the identification, investigation and resolution of the issue was appropriate and consistent with international best practice;
- Whether the amended methods, systems and processes implemented in each case was consistent with international best practice.

Estimated time frames

The brief would include OQIs, adverse event log entries, reports and correspondence about the resolution and re-testing.

Estimate time for task is 2-3 days (20-30 hours).

Due date would be 29 September for draft report, 3 October for final report.
Oral evidence on this topic would be in the week of 17/10 or 24/10.

Could you let me know if you would be willing to take on this task?

Thanks
Susan

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

LWW-4

Fletcher, Caitlin [redacted]

From: Linzi Wilson-Wilde <[redacted]>
Sent: Monday, 9 October 2023 12:28 PM
To: Linzi Wilson-Wilde
Subject: Fwd: Options Paper Report Invoice
Attachments: 1.1 Instructions to Expert - Linzi Wilson-Wilde.docx

Follow Up Flag: Follow up
Flag Status: Completed

Begin forwarded message:

From: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
Subject: RE: Options Paper Report Invoice
Date: 21 September 2022 at 9:46:03 pm AEST
To: Linzi Wilson-Wilde <[redacted]>
Cc: Jac Thong <jac.thong@dnainquiry.qld.gov.au>

Hi Linzi,

I have passed your invoices on for payment.

Yes, we would like to go ahead with the other piece of work regarding DNAIQ contamination. The proposed instructions are attached, which I provide confidentially so you can see the scope of it. We are still processing the procurement, but my hope is to send you the contract and material on Friday.

I understand you go overseas on 30 September. Will these timeframes still suit if the brief is provided on Friday?

Thanks
Susan

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

From: Linzi Wilson-Wilde <[redacted]>
Sent: Wednesday, 21 September 2022 8:52 AM
To: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
Subject: Options Paper Report Invoice

Dear Susan,
You should have received my latest report last night. Please let me know if there are any issues or concerns.
Please find attached the associated invoice.
Would you mind chasing up the payment of the other invoices please.
Also, you mentioned another potential piece of work regarding contamination. Is this likely to go ahead? - as I need to organise my schedule.
All the best, Linzi

Instructions to expert

Linzi Wilson-Wilde

Background

1. The Commission of Inquiry into DNA testing in Queensland was announced by the Queensland Premier on 6 June 2022 and commenced on 13 June 2022.

2. The Commission was prompted by a number of issues raised publicly regarding the adequacy of forensic DNA testing undertaken at the Queensland Health Forensic and Scientific Services (QHFSS).

3. General and specific concerns have been raised regarding cross contamination of samples using DNA IQ testing instrument in the QHFSS DNA Analysis Unit.

4. In and around 2008, it was discovered that the seals from the DNA IQ products (consumables) in the extraction phase were leading to cross-contamination amongst different, unrelated samples. The issue was documents in various OQIs. Once the laboratory discovered the issue, there was a retrospective assessment of all the samples that were processed with the relevant consumables. The issue affected many batches of samples.

5. QHFSS conduct both an internal audit, and procured an external audit, of the issue.

Overview of engagement

6. You have been engaged to review the documentation provided and determine whether the scientific testing process for use of the DNA IQ instrument was scientifically sound and conducted in accordance with international best practice.

7. In addition, you will also consider the audit reports and whether the analysis employed was scientifically sound and in accordance with international best practice.

Instructions

8. You are instructed to:

   (a) consider the briefed material;

   (b) provide advice to the Commission as to:

1. Whether the methods, systems and processes in relation to using the DNAIQ instrument was consistent with international best practice when issues arose in and around 2008;
2. Whether the identification, investigation and resolution of the DNAIQ issues was appropriate and consistent with international best practice;
3. Whether the amended methods, systems and processes implemented for using the DNAIQ instrument was consistent with international best practice;
4. If any deficiency in the methods, systems or processes for use of the DNAIQ instrument or the resolution of the issue that arose in and around 2008 is found, the impact of that deficiency on:
    i. Whether the obtaining of a useable DNA profile from a sample by the laboratory was reliable and accurate;
    ii. Whether DNA profiles obtained by the laboratory are reliable and accurate.

9. To provide that advice, please:

(a) consider all the enclosed material;

(b) discuss with Counsel Assisting the Commission the adequacy of the instructions and brief to be able to provide the advice sought by **23 September 2022**;

(c) provide a draft report for discussion with Counsel Assisting the Commission, by **28 September 2022**; and

(d) provide a final report no later than **3 October 2022**.

LWW-5

Fletcher, Caitlin [redacted]

From: Linzi Wilson-Wilde <[redacted]>
Sent: Monday, 9 October 2023 12:29 PM
To: Linzi Wilson-Wilde
Subject: Fwd: DNAIQ contamination
Attachments: ggs-general-contract-conditions.pdf; Short Form Contract - Linzi Wilson-Wilde (DNAIQ).docx

Follow Up Flag: Follow up
Flag Status: Completed

Begin forwarded message:

From: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
Subject: DNAIQ contamination
Date: 23 September 2022 at 7:31:03 pm AEST
To: Linzi Wilson-Wilde <[redacted]>
Cc: Jac Thong <jac.thong@dnainquiry.qld.gov.au>

Thanks very much Linzi. My apologies for the delay in getting this to you.

Please find your brief, available at

This email originated from outside Queensland Health. DO NOT click on any links or open attachments unless you recognise the sender and know the content is safe.

Brief to Expert - Linzi Wilson-Wilde - DNA IQ . Your instructions are in the folder marked “Letter to Expert”.

We have asked for some correspondence, investigation files and reports etc in relation to each OQI, which we are expecting on Tuesday at 12pm. Given they are OQIs, and our previous experience, we don’t expect it to be too voluminous, often a lot of what was done is in the OQI report.

The short form contract and the associated conditions are also attached.

Please let us know when you are ready to discuss the instructions and any questions you have.

Kind regards,

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland

Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

From: Linzi Wilson-Wilde <[redacted]>
Sent: Friday, 23 September 2022 2:28 PM
To: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
Subject: Fwd: Options Paper Report Invoice

Dear Susan,

Please find attached as requested.

All the best, Linzi

Sent from my iPhone

> **From:** Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
> **Date:** 23 September 2022 at 11:48:05 ACST
> **To:** Linzi Wilson-Wilde <[redacted]>
> **Cc:** Jac Thong <jac.thong@dnainquiry.qld.gov.au>
> **Subject: RE: Options Paper Report Invoice**
>
> Thanks Linzi. Could I ask you to sign this confidentiality agreement so we can provide the brief before finalisation of procurement?
>
> Many thanks,
>
> Susan Hedge
> **Counsel Assisting**
> Commission of Inquiry into Forensic DNA Testing in Queensland
> Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

---

From: Linzi Wilson-Wilde <[redacted]>
Sent: Thursday, 22 September 2022 10:46 PM
To: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>

Cc: Jac Thong <jac.thong@dnainquiry.qld.gov.au>
Subject: Re: Options Paper Report Invoice

Many thanks Susan,
If I receive the information Friday and as long as the number of documents to be reviewed is achievable, I can provide a draft report by the due date.
I can confirm this after receiving and reviewing the information tomorrow.
All the best, Linzi

LWW-6

Fletcher, Caitlin [redacted]

From: Linzi Wilson-Wilde <[redacted]>
Sent: Thursday, 26 October 2023 9:22 AM
To: Fletcher, Caitlin [redacted]
Subject: Fwd: DNA IQ Contamination - Additional material

Caution: External email.

Sent from my iPhone

Begin forwarded message:

From: Jac Thong <jac.thong@dnainquiry.qld.gov.au>
Date: 6 October 2022 at 11:34:39 AEST
To: [redacted]
Cc: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
Subject: DNA IQ Contamination - Additional material

Dear Linzi,

Some additional OQIs in respect of DNA IQ Contamination at QHFSS during the relevant period have been identified by scientist, Allan McNevin, in his draft statement. I have included these OQIs in the "9.0 Supplementary Material" folder.

I will provide Allan McNevin's statement to you once finalised, as he may provide some useful context for your report.

If you require anything further, please do not hesitate to contact Susan and myself.

Kind regards,

Jac Thong
Legal Officer
Commission of Inquiry into Forensic DNA Testing in Queensland
Email: jac.thong@dnainquiry.qld.gov.au
Mobile: [redacted]

LWW-7

Amended Instructions to expert

Linzi Wilson-Wilde

12 October 2022

Background

1. The Commission of Inquiry into DNA testing in Queensland was announced by the Queensland Premier on 6 June 2022 and commenced on 13 June 2022.

2. The Commission was prompted by a number of issues raised publicly regarding the adequacy of forensic DNA testing undertaken at the Queensland Health Forensic and Scientific Services (QHFSS).

3. General and specific concerns have been raised regarding cross contamination of samples using DNA IQ testing instrument in the QHFSS DNA Analysis Unit.

4. In and around 2008, it was discovered that the seals from the DNA IQ products (consumables) in the extraction phase were leading to cross-contamination amongst different, unrelated samples. The issue was documents in various OQIs. Once the laboratory discovered the issue, there was a retrospective assessment of all the samples that were processed with the relevant consumables. The issue affected many batches of samples.

5. QHFSS conducted both an internal audit, and procured an external audit, of the issue.

Overview of engagement

6. You have been engaged to review the documentation provided and determine whether the scientific testing process for use of the DNA IQ instrument was scientifically sound and conducted in accordance with international best practice.

7. In addition, you will also consider the audit and investigation reports and whether the analysis employed was scientifically sound and in accordance with international best practice.

Instructions

8. You are instructed to:

   (a) consider the briefed material;

   (b) provide advice to the Commission as to:

1. Whether the methods, systems and processes in relation to using the DNA IQ instrument was consistent with international best practice when issues arose in and around 2008, including consideration of the following particular issues:
    i. Whether the process that QHFSS introduced, first using automated liquid handler platforms in October 2008 and then commencing processing with 'off deck lysis' in March 2008, to perform automated DNA IQ extractions was consistent with international best practice
    ii. Whether adequate training following the implementation of DNA IQ could have prevented the contamination issue, with reference to Audit 8227 "Process Audit of Automated DNA IQ System (including Off-Deck Lysis)" (3.3 - Audit Report - 'Audit 8227. Process audit of automated DNA IQ System (including off-deck lysis)' (Cheng, Clause.pdf where:
        - it was identified that "KPC's for the off-deck lysis and STORstar components are not included in the DNA IQ training module, but are integral to the DNA IQ protocol" at [3.1];
        - it was identified that "some staff members … feel that they are frequently exposed to changes in protocols and methods, and are required to adapt quickly" at [3.12]; and
        - a number of recommendations were made relating to training at [4.1]-[4.7].
    iii. Whether the monitoring of environmental conditions and protocols relating to laboratory maintenance and cleaning of DNA IQ instruments between October 2007 and May 2009 were consistent with international best practice.
2. Whether the identification, investigation/s and resolution of the DNA IQ issues was appropriate and consistent with international best practice, including consideration of the following particular issues:
    i. Whether Audit 8227 was an appropriate response to the OQIs raised and carried out in a manner consistent with international best practice
    ii. Whether the recommendations of Audit 8227 were appropriate and whether other recommendations would be expected or preferred.
    iii. Whether Audit 8752 was an appropriate response to the ongoing DNA IQ contamination issue and carried out in a manner consistent with international best practice;
    iv. Whether Audit 9642 was an appropriate response to the ongoing DNA IQ contamination issue and carried out in a manner consistent with international best practice;
    v. Whether the recommendations of Audit 9642 were appropriate and whether other recommendations would be expected or preferred.

vi. Whether the recommendations from Drs Sloots and Whiley's report were appropriate and whether other recommendations would be expected or preferred.

vii. Whether QHFSS' response to the other audits and reports were appropriate and consistent with international best practice.

3. Whether the amended methods, systems and processes implemented for using the DNA IQ instrument was consistent with international best practice;

4. If any deficiency in the methods, systems or processes for use of the DNA IQ instrument or the resolution of the issue that arose in and around 2008 is found, the impact of that deficiency on:

    i. Whether the obtaining of a useable DNA profile from a sample by the laboratory was reliable and accurate;

    ii. Whether DNA profiles obtained by the laboratory are reliable and accurate.

9. To provide that advice, please:

(a) consider all the enclosed material;

(b) discuss with Counsel Assisting the Commission the adequacy of the instructions and brief to be able to provide the advice sought by **14 October 2022**;

(c) provide a draft report for discussion with Counsel Assisting the Commission, by ~~**28 September**~~ **14 October 2022**; and

(d) provide a final report no later than ~~**3**~~ **17 October 2022**.

LWW-8

Professor Linzi Wilson-Wilde OAM PhD

ABN 18 568 796 588

REPORT

Report to: Walter Sofronoff QC, Commissioner
Commissioner of Inquiry into Forensic DNA Testing in Queensland

Commented [EL1]: KC now

Report Date: 16 October 2022

Request:

1. Review the documentation provided and determine whether the scientific testing process for use of the DNA IQ instrument was scientifically sound and conducted in accordance with international best practice.
2. Consider the audit and investigation reports and whether the analysis employed was scientifically sound and in accordance with international best practice.

Information Reviewed:

Document Name	Date Issued	Document Number
Amended Instructions to expert Linzi Wilson-Wilde	12/10/2022	n/a
Report – 'Investigation into a partial DNA profile negative extraction control sample' (Cheng, McNevin)	Undated	FSS.0001.0057.3100
Report – A review of DNA extraction control results obtained in the first six months of 2008' (Harvey & McNevin)	Undated	FSS.0001.0065.5065
Audit 8227 Checklist	Undated	FSS.0001.0060.4876
Audit Report – 'Audit 8227. Process Audit of the Automated DNA IQ System (including Off-Deck Lysis) (Cheng, Clausen, Muharam)	Aug 2008	FSS.0001.0057.3107
Presentation – Audit 8227: Process audit of the DNA IQ System	17/09/08	FSS.0001.0060.4883
Audit Report – Extraction Batch Audit	Sep 2008	FSS.0001.0060.5715
Presentation – Extraction Batch Audit	17/09/08	FSS.0001.0060.5730
External Review of Operations Report – Drs Sloots & Whiley	14/11/08	FSS.0001.0024.0805
Presentation – "Update on DNA Analysis Issues"	15/12/08	FSS.0001.0024.4152
NATA Report on reassessment (Item 4.9.1)	27/01/09	FSS.0001.0024.3564

Document Name	Date Issued	Document Number
Audit Report – 'Audit 9642: DNA IQ method of extracting DNA from casework and reference samples audit' (Sultana & Brady)	Aug 2009	FSS.0001.0060.5699
Audit #9642 Response	unknown	FSS.0001.0056.7885
OQIs/Audit entries documents x 31 documents	various	various
Correspondence documents x 23 documents	various	various
Spreadsheets x 5 documents	various	various
Miscellaneous documents x 2 documents	various	various
Signed Statement of Justin Howes	6 October 2022	WIT.0016.0188.0001
Signed Statement of Cathie Allen	11 October 2022	WIT.0019.0016.0001
Signed Statement of Allen McNevin	13 October 2022	WIT.0040.0077.0001
Anti Contamination Procedure 2285V2	10/12/2007	n/a
Environmental Monitoring SOP 23502V3	27/05/2008	n/a
Automated DNA extraction with the DNA IQ™ Kit Training Module	31/10/2007	FSS.0001.0080.6499
DNA IQ™ Method of Extracting DNA from Casework and reference Samples	27/03/2008	FSS.0001.0080.6644
MPII ExtA and MPII ExtB Calibration, Diary and Maintenance logs x 14 documents	various	various
Records of Environmental Monitoring x 3 documents	various	various
Extraction Batch Contamination Notes	various	Various
Investigation into contamination of negative and positive extraction control re OQI 19349	unknown	FSS.0001.0080.2541
Investigation into mixture found in FTA evidence sample re OQI 19767	unknown	FSS.0001.0080.259
Investigation into negative control with peaks re OQI 19768	unknown	FSS.0001.0080.2651
Investigation into negative extraction control with a partial DNA profile (barcode 346794568) re OQI 20231	unknown	FSS.0001.0080.27
Investigation into positive control with extra peaks (barcode 346792908)	unknown	FSS.0001.0080.3123

Introduction

1. [Would it be possible to have a short explanation here of what DNAIQ does, when it was implemented how it was used in 2008 what sort of issues arose the timeframes within which those issues arose what was done to investigate and resolve them? I think that would assist with understanding of the rest of the report by the public/lawyers]

Comments and Opinions

Question 1. Whether the methods, systems and processes in relation to using the DNA IQ instrument was consistent with international best practice when issues arose in and around 2008.

Methods

~~1.~~2. DNA extractions can be performed manually (off deck), via an automated liquid handling system (on deck), or by a combination of the two methods. The latter is usually conducted by manual (off deck) handling of the initial lysis steps, followed by automated liquid handling (on deck) of the remaining steps in the DNA extraction methodology.

~~2~~3. Manual handling to remove the cellular material from substrates (such as swabs) into a liquid form for subsequent automated processing, can produce more reproducible results as swabs and other physical substrates can interfere with the pipetting process in robotic platforms. This is because robotic platforms may not have the flexibility to deal with different types of substrates and their variable position in the tubes, which are not standardised sufficiently for an automated system.

~~3.~~4. Implementation of a method into casework should be preceded by an appropriately designed validation or verification study. Generally, if the method has been robustly validated (according to international guidelines) and successfully implemented into a laboratory elsewhere and the proposed method is unchanged from that validation, then the method only needs verification to demonstrate that the method operates as expected in the new laboratory. If the method has not been validated robustly elsewhere, then it should be validated prior to use so that the limitations and operating parameters of the method are clearly understood.

~~4.~~5. If the method has been demonstrated to operate as expected and produce reliable and reproducible results, then it can be implemented through appropriate training of scientists.

~~5.~~6. If the automated method released in October 2007 (FSS.0001.0080.6563) and the off-deck lysis method released in March 2008 (FSS.0001.0080.6644) have been appropriately validated, then they can both be considered appropriate to use. [Was the use of these two methods for the purposes they were being used for in the QHFSS lab consistent with best practice? And were the SOPs for using these methods consistent with best practice?]

~~6.~~7. I note I have not reviewed the validation documentation concerning the methods described in paragraph 5, and so cannot comment on the appropriateness of the validation and therefore the appropriateness of the implementation.

~~7~~8. There is evidence to suggest that the automated method may not have been sufficiently validated when originally implemented, as documented in the External Review of Operations Report – Drs Sloots and Whiley, FSS.0001.0024.0805. The report states "*it may appear that the original issue concerning the cross-contamination of samples in the deep-well plates could have been prevented if this change in procedure has been fully validated against existing protocol when the new method was introduced.*" This would indicate that the validation of this method should be reviewed.

Training

8.9. Training should be consistent with the Methods and Standard Operating Procedures (SOPs) used in the laboratory and be fit for purpose to demonstrate scientists have been trained sufficiently to properly follow and understand methods and SOPs. Training should culminate in the scientist being authorised as competent (if appropriate) to perform the relevant tasks. Training should also be ongoing to ensure continued competence of scientists.

9.10. The QHFSS training module for the Automated DNA Extraction with the DNA IQ™ Kit (dated 31/10/2007, FSS.0001.0080.6499) requires scientists to demonstrate the successful completion (under the guidance of a trainer) of five automated sample extraction batches and 25 written theory-based questions. These are mapped against Key Performance Criteria (KPCs), which have been determined as part of the development of the training module, to represent key aspects of the method/SOP that the scientist should understand. Demonstration of the successful extraction of five extraction batches containing a routine number of samples is sufficient to train and demonstrate competency in the method. However, this is only true if the batches are representative of any variations in how the methods may be performed (e.g., slight changes in the procedure). If the variations in the methods are significantly different (e.g., manual versus automated processing), then further replicates should be included. It appears that this approach has been included in the requirements for Demonstrated Ability (Part A) for batch extractions in later versions of the extraction training module (see FSS.0001.0080.6545 and FSS.0001.0080.6551).

10.11. It should be noted that subsequent changes to the method post demonstration of competence should be clearly communicated and understood by scientists. It is evident that some staff members were not comfortable with the level of continued training in changes to the methods/SOPs (see FSS.0001.0057.3107).

11.12. The contamination events identified in FSS.0001.0057.3107 and in OQIs 18580, 19349, 19477, 19768, and 20231 appear to be complex in nature and the exact origin was unable to be fully resolved, however a number of possible sources were identified (see FSS.0001.0024.0805 for summary). It is unlikely that a revised training program would have prevented these contamination events.

12.13. It is unclear whether the contamination events of the negative and positive extraction controls are identified "real-time", or at a later date as part of an auditing process. Extraction controls should be checked for each extraction batch prior to the sample results being released to the case reporting scientists and subsequent communication to the client. Therefore, it would be anticipated that any contamination events would be identified relatively quickly and steps to identify the source and mitigate further events conducted

13.14. There should also be a clear process for staff to raise issues and seek remedies. I note that Audit Report 8227 (FSS.0001.0060.4883) details numerous comments from staff regarding issues with the automated extraction process. These include issues with the tip chute receptacle (2.4.13.6), the plate not fitting into the deck correctly (2.4.13.8, 3.10), and condensation on the top of wells (page 12). These issues are more likely related to the contamination events. As they have been identified and raised by staff as part of the review, it supports the contention that staff training is adequate and that the contamination issues stem from equipment/consumable related failures.

Environmental Monitoring

14.15. The QHFSS Environmental Monitoring procedure (23602V3) details accidental contamination, monthly and yearly environmental monitoring sampling requirements to identify potential surface contamination, including specific surface areas to be tested.

Commented [EL2]: In your opinion, when the off deck lysis method was introduced for DNA IQ, should the training have been amended to ensure that scientists were trained for manual and automated processing? Did this make the training deficient?

Commented [EL3]: Note, these are SOP 24896 v6 (30.03.2015) and v7 (07.11 2016) but the introduction of the requirement of both automated and manual extractions in training (as opposed to simply "extraction batches") was first introduced in v3 (14.08 2009)

Commented [EL4]: If the contamination events were identified in "real-time" was the response by QHFSS timely? Was it the response you would expect, in your opinion?

~~15.~~16. The Anti Contamination Procedure (22857V2) details laboratory layout, personal protective equipment (e.g., laboratory coats, gloves, masks) requirements, monthly clean, and environmental monitoring.

~~16.~~17. Records were provided for the results of the environmental monitoring sampling and DNA testing; however, it is not clear whether critical areas are tested more frequently or whether all areas listed in the environmental monitoring procedure have actually been tested. It is recommended that a system be put in place to track that identified critical areas have been tested as appropriate. For example, from the excel spreadsheet (FBE-07-08) the water bath handle was tested regularly, however the clothesline was only tested once. This may be due to a risk-based approach; however, this is unclear as it is not documented. [Is the testing regime as documented best practice? Why/why not?]

~~17.~~18. Additionally, there is limited procedure information in the procedure documents regarding the deep clean process. The information states that the deep clean should *"…include cleaning of items not cleaned during the normal examination process i.e., chairs, computers, fridge handles etc."* It is recommended that further information should be included in the procedure detailing what should be cleaned in the deep clean and how. I note I was not provided with any records of the deep cleans. Records of deep cleans should be maintained. [Is the deep clean regime as documented best practice? Why/why not? How regularly would you expect there to be a deep clean of the lab?]

Question 2. Whether the identification, investigation/s and resolution of the DNA IQ issues was appropriate and consistent with international best practice

19. Considerable work has been conducted by QHFSS in reviewing the issues experienced in relation to the automated DNA extraction process. This work is generally of a high standard. [Can you provide an overall conclusion in this paragraph regarding whether the identification, investigation/s and resolution of the DNA IQ issues by QHFSS was appropriate and consistent with international best practice?]

~~18.~~

~~19.~~20. Quality assurance should encompass a principle of continuous improvement. Therefore, methods and systems should be regularly reviewed to identify further opportunities for improvement. This should be based in a quality culture where any errors provide learnings and staff feel comfortable to identify errors, seek solutions, and opportunities for learning in a positive focussed environment. A punitive quality environment will promote errors to be hidden and not recorded, so that the learning and quality improvement will not be identified. All human-based systems will incur errors and so it is important to foster an environment where these errors can be easily identified and rectified.

~~20.~~21. **Audit 8227** (FSS.0001.0057.3107) was very thorough. I note nine extraction batches were reviewed as follows:

- Off-deck (retained supernatant) x 1
- Off-deck (no retained supernatant) x 3
- STORstar lysate x 1
- Automated DNA IQ (Casework), elution x 1
- Automated DNA IQ (Reference) x 3

~~21.~~22. I would have preferred to see at least two of each type of extraction process reviewed as part of the audit.

Commented [EL5]: Can you provide an overall conclusion in this paragraph regarding whether the identification, investigation/s and resolution of the DNA IQ issues by QHFSS was appropriate and consistent with international best practice?

~~22.~~23. I also note that it is not clear which scientists conducted the extraction batches. It would have been useful to identify the scientists (potentially using a code) to ensure a broad range of the scientists were reviewed. This would facilitate the identification of any user differences.

~~23.~~24. The recommendations noted in the audit report 8227 were appropriate.

~~24.~~25. The **extraction batch audit** (FSS.0001.0060.5715) was useful in that it identified further contamination events and a quality improvement (Batch Comparison Macro) to check samples within batches to each other.

~~25.~~26. As noted previously, it is unclear whether the contamination events of the negative and positive extraction controls were identified "real-time", or at a later date as part of an auditing process (as detailed in this extraction batch audit report). It is unclear in the audit report whether the extraction controls are being checked for the first time, or whether the results of the checking are being collated. To reiterate, extraction controls should be checked for each extraction batch prior to the sample results being released to the case reporting scientists for communication to the client.

~~26.~~27. It is not clear from the **Audit 9642** (FSS.0001.0060.5699) report, what was actually conducted as part of the audit as the method is not detailed. The findings and observations indicated that the audit may have been robust and included the observation of an extraction process, however, this cannot be ascertained for certain. It is therefore difficult to comment on the appropriateness of the audit. The recommendations contained in the audit report appear reasonable.

~~27.~~28. The **report of Drs Sloots and Whiley** (FSS.0001.0024.0805) provides insufficient detail to comment on the appropriateness of the review. However, the findings contained in the report appear appropriate.

Question 3. Whether the amended methods, systems and processes implemented for using the DNA IQ instrument was consistent with international best practice

29. [Could you provide a short explanation fo the amended methods, systems, processes that were implemented with reference to the material?]

~~28.~~30. If the amended methods have been demonstrated through validation/verification to operate as expected and produce reliable and reproducible results, then they can be considered suitable for implementation and se.

~~29.~~31. It was noted that not all documents were dated (it is noted that documents may have been dated through an electronic record storage system). It is strongly recommended that all documents and reports should be dated within the text of the document.

Question 4. If any deficiency in the methods, systems or processes for use of the DNA IQ instrument or the resolution of the issue that arose in and around 2008 is found, the impact of that deficiency on:

a. **Whether the obtaining of a useable DNA profile from a sample by the laboratory was reliable and accurate;**

~~30.~~32. Samples that have DNA profile results and that have undergone the relevant quality assurance checks, including the checking of relevant control samples (e.g. extraction reagent blank, positive and negative controls), could be considered reliable and accurate

b. **Whether DNA profiles obtained by the laboratory are reliable and accurate.**

Commented [EL6]: As noted above, if the contamination events were identified in "real-time" was the response by QHFSS timely? Was it the response you would expect, in your opinion?

Commented [EL7]: In the circumstances, should the audit report have detailed the method of the audit? Should it have detailed the findings and observations? Does the fact that it doesn't present difficulties from a scientific perspective as another person cannot comment on the appropriateness of it

Commented [EL8]: Typo/error

Commented [EL9]: Can you expand on this? Would you expect to see any particular method, system or process implemented following a contamination event of this size? Would you expect to see anything done where the cause of the contamination was not able to be conclusively identified? (for example, re-validation or re-verification or a change in process)
If so, was that done by QHFSS (as far as you can tell)?

Commented [EL10]: While I understand the answer, this doesn't really directly answer the question posed. Could you consider whether, in your opinion, anything you have identified in your review of the material (e.g. lack of validation of new method) would effect the reliability and accuracy of results?

~~31.~~33. Samples that have DNA profile results and that have undergone the relevant quality assurance checks, including the checking of relevant control samples (e.g. extraction reagent blank, positive and negative controls), could be considered reliable and accurate

Commented [EL11]: As above. Can you expand upon this? In your opinion, in light of your review of the material, do you think that QHFSS did enough in their investigation, audits and QA to determine what results were reliable and accurate and which were not?

Professor Linzi Wilson-Wilde OAM

LWW-9

Fletcher, Caitlin [redacted]

From: Linzi Wilson-Wilde <[redacted]>
Sent: Thursday, 26 October 2023 9:12 AM
To: Fletcher, Caitlin [redacted]
Subject: Fwd: DNAIQ report
Attachments: DRAFT Report - Contamination - COI comments 17.10.22.docx

Sent from my iPhone

Begin forwarded message:

> **From:** Linzi Wilson-Wilde <[redacted]>
> **Date:** 18 October 2022 at 08:31:18 AEST
> **To:** Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
> **Cc:** Jac Thong <jac.thong@dnainquiry.qld.gov.au>, Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>
> **Subject: Re: DNAIQ report**
>
> Many thanks, I will get into this.
> When would be a good time for a meeting?
> All the best, Linzi
>
> Sent from my iPhone
>
> > On 17 Oct 2022, at 23:15, Susan Hedge <susan.hedge@dnainquiry.qld.gov.au> wrote:
> >
> > Dear Linzi
> >
> > Thank you for your draft report and your work on this topic. We appreciate the large amount of material we have provided.
> >
> > Please find attached the draft with some comments both in track changes and using the comments function.
> >
> > Overall, the report deals with the issues the Commission is interested in and identifies particular issues where improvements could be made very well, but we suggest you could:
> > - Add in more introduction/background to assist with understanding the report;
> > - Come to more direct conclusions about whether certain processes, methods etc were best practice.

I think it would be best for us to see another draft before finalisation and potentially discuss if possible. Let us know once you have had a chance to read the feedback when we might discuss. I am available tomorrow afternoon if that assists?

Thanks
Susan

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

From: Linzi Wilson-Wilde <[redacted]>
Sent: Monday, 17 October 2022 12:26 AM
To: Jac Thong <jac.thong@dnainquiry.qld.gov.au>
Cc: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>; Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>
Subject: Re: DNAIQ report

Dear Susan,

I apologise for the delay. Please find attached my draft report.

I am concerned that there were an extensive number of documents and some were very large. I have endeavoured to work my way through them, however I do have concerns as to the depth I have been able to go in all of the documents (some I have gone into extensively) given the timeframes and the volume.

I have attached my draft report for your feedback.
‘
All the best, Linzi

> On 14 Oct 2022, at 5:22 pm, Jac Thong <jac.thong@dnainquiry.qld.gov.au> wrote:
>
> Dear Linzi,
>
> By way of notice, I have incorporated Allan McNevin’s signed statement (received today) into your brief at folder 9.12.
>
> Kind regards,
>
> Jac Thong

Legal Officer
Commission of Inquiry into Forensic DNA Testing in Queensland
Email: jac.thong@dnainquiry.qld.gov.au
Mobile: [redacted]

<image001.jpg>

From: Linzi Wilson-Wilde <[redacted]>
Sent: Wednesday, 12 October 2022 10:54 PM
To: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
Cc: Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>; Jac Thong <jac.thong@dnainquiry.qld.gov.au>
Subject: Re: DNAIQ report

Many thanks Susan, noted. I will get the draft report to you Friday.

All the best, Linzi

Sent from my iPad

> On 12 Oct 2022, at 11:06 pm, Susan Hedge <susan.hedge@dnainquiry.qld.gov.au> wrote:
>
> Dear Linzi,
>
> I hope you had a great trip overseas.
>
> **Refined instructions**
>
> We have added some specific questions to some of our broader questions in the instructions to assist in the preparation of your report. Please find attached the updated instructions.
>
> **Timeframes**
>
> As discussed, we have changed the timeframes to a draft report due this Friday 14/10/22, with the final report due Monday 17/10/22.
>
> We expect you will give evidence on Friday 21/10/22.
>
> **Additional material**
>
> We have received some additional material relating to the DNA IQ topic in a recent tranche of documents disclosed to the Commission.
>
> The relevant material has been included in your brief in the supplementary material folder (available at

<image002.png>

9.0 Supplementary material) and relates to:

1. additional investigation reports concerning DNA IQ related OQIs;
2. extraction batch contamination notes;
3. environmental monitoring and anti-contamination procedures;
4. all SOP versions (if you want to regard to the procedure in place at different points of time);
5. maintenance logs and cleaning diaries for the DNA IQ instrument/s;
6. additional meeting minutes; and
7. signed statement and exhibits of Justin Howes and Catherine Allen relating to the DNA IQ issue (Please note: the statements are large and contain multiple exhibits. The specific references to each statement and exhibits you are briefed in this respect have been referenced in the index).

Two additional signed statements are due to be provided to the Commission tomorrow afternoon. We will provide a copy of these signed statements to you when received.

Please let us know if we can assist in any way. We would be happy to discuss with you on Friday, or over the weekend or Monday after we have your draft report if more convenient.

Thanks
Susan

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

<image001.jpg>

email in error, please notify the author and delete this message immediately

This email is intended only for the addressee. Its use is limited to that intended by the author at the time and it is not to be distributed without the author's consent. Unless otherwise stated, the State of Queensland accepts no liability for the contents of this email except where subsequently confirmed in writing. The opinions expressed in this email are those of the author and do not necessarily represent the views of the State of Queensland. This email is confidential and may be subject to a claim of legal privilege. If you have received this email in error, please notify the author and delete this message immediately

Fletcher, Caitlin [redacted]

From: Linzi Wilson-Wilde <[redacted]>
Sent: Monday, 9 October 2023 12:33 PM
To: Linzi Wilson-Wilde
Subject: Fwd: DNAIQ report
Attachments: Amended Instructions to Linzi Wilson-Wilde (DNA IQ Contamination) 12.10.22.docx

Follow Up Flag: Follow up
Flag Status: Completed

Begin forwarded message:

From: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
Subject: DNAIQ report
Date: 12 October 2022 at 10:36:29 pm AEST
To: Linzi Wilson-Wilde[redacted]
Cc: Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>, Jac Thong <jac.thong@dnainquiry.qld.gov.au>

Dear Linzi,

I hope you had a great trip overseas.

Refined instructions

We have added some specific questions to some of our broader questions in the instructions to assist in the preparation of your report. Please find attached the updated instructions.

Timeframes

As discussed, we have changed the timeframes to a draft report due this Friday 14/10/22, with the final report due Monday 17/10/22.

We expect you will give evidence on Friday 21/10/22.

Additional material

We have received some additional material relating to the DNA IQ topic in a recent tranche of documents disclosed to the Commission.

The relevant material has been included in your brief in the supplementary material folder (available at

9.0 Supplementary material) and relates to:

1. additional investigation reports concerning DNA IQ related OQIs;
2. extraction batch contamination notes;
3. environmental monitoring and anti-contamination procedures;
4. all SOP versions (if you want to regard to the procedure in place at different points of time);
5. maintenance logs and cleaning diaries for the DNA IQ instrument/s;
6. additional meeting minutes; and
7. signed statement and exhibits of Justin Howes and Catherine Allen relating to the DNA IQ issue (Please note: the statements are large and contain multiple exhibits. The specific references to each statement and exhibits you are briefed in this respect have been referenced in the index).

Two additional signed statements are due to be provided to the Commission tomorrow afternoon. We will provide a copy of these signed statements to you when received.

Please let us know if we can assist in any way. We would be happy to discuss with you on Friday, or over the weekend or Monday after we have your draft report if more convenient.

Thanks
Susan

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

This email originated from outside?Queensland Health. DO NOT click?on any links or open attachments unless you recognise the sender and know the content is safe.

LWW-10

Fletcher, Caitlin [redacted]

From: Linzi Wilson-Wilde <[redacted]>
Sent: Monday, 9 October 2023 12:34 PM
To: Linzi Wilson-Wilde
Subject: Fwd: DNA IQ - Brief to Linzi Wilson-Wilde OAM - Additional material
Attachments: DNA IQ - Chronology.docx

Follow Up Flag: Follow up
Flag Status: Completed

Begin forwarded message:

From: Jac Thong <jac.thong@dnainquiry.qld.gov.au>
Subject: DNA IQ - Brief to Linzi Wilson-Wilde OAM - Additional material
Date: 18 October 2022 at 6:27:06 pm AEST
To: Linzi Wilson-Wilde <[redacted]>
Cc: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>, Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>

Dear Linzi,

Thank you for speaking with the Commission this afternoon.

Chronology

Please find **attached** a chronology that may assist with your report. The chronology does not incorporate every document in your brief but provides a general timeline in relation to key documents.

Brief

The brief and index have been updated to include:

1. Validation documents; and

2. Signed statement of Thomas Nurthern.

For convenience, link to brief -

Brief to Expert - Linzi Wilson-Wilde - DNA IQ

Discussion Points

In summary from the telephone discussion, we understand the topics you will review are as follows:

1. validations;
2. the overall time taken for an investigation (ie. OQI, audit or report) to be completed;
3. the adequacy of information contained in an OQI report to assist with the identification of systematic issues; and
4. any recommendations you may have for future best practice in respect of documents created by QHFSS (ie. dates on documents, additional information fields etc).

If you have any further queries, please do not hesitate to contact Susan, Ellie and myself.

Kind regards,

Jac Thong
Legal Officer
Commission of Inquiry into Forensic DNA Testing in Queensland
Email: jac.thong@dnainquiry.qld.gov.au
Mobile: [redacted]

LWW-11

Professor Linzi Wilson-Wilde OAM PhD

ABN 18 568 796 588

REPORT

Report to: Walter Sofronoff KC, Commissioner
Commissioner of Inquiry into Forensic DNA Testing in Queensland

Report Date: ~~19~~20 October 2022

Request: This report has been requested by the Commission of Inquiry into Forensic DNA Testing in Queensland.

The instructions to the expert provided by the Commission of Inquiry can be found at Appendix 1.

The main purpose of this report is to:

1. Review the documentation provided and determine whether the scientific testing process for use of the DNA IQ instrument was scientifically sound and conducted in accordance with international best practice.
2. Consider the audit and investigation reports and whether the analysis employed was scientifically sound and in accordance with international best practice.

Information Reviewed: The index of information provided and considered as part of the development of this report can be found at Appendix 2.

Qualifications I commenced my career at Victoria Police in 1996 as a forensic biologist, attending crime scenes, with expertise in biological fluid identification and DNA analysis. In 2000 I joined New South Wales Police as a Forensic DNA Specialist working on legislative reform, policy development, the investigation of high-profile murder cases, cold case reviews and the highly publicised mass DNA screen in the town of Wee Waa, NSW. After moving to the Australian Federal Police (AFP) in 2002 as Team Leader of the Biology Team, I coordinated the DNA analysis of all samples involved in the disaster victim identification and criminal investigation of the Bali Bombing in October 2002 and advised on the associated legislative change. Whilst at the AFP I commenced my PhD at the University of Canberra in species identification of Diprotodontia for wildlife crime investigations, which I completed in 2011. I joined the National Institute of Forensic Science (NIFS) in 2008 and succeeded to Director NIFS in 2015. I am the Chair of Standards Australia committee CH041 and ISO committee TC272 – Forensic Sciences, developing forensic specific Australian and international Standards respectively. I am the current President of the International Forensic Strategic Alliance and represent them on the International Criminal Court Office of the Prosecutor Scientific Advisory Board. I am currently the Director of Forensic Science SA. My Curriculum Vitae can be found at Appendix 3.

Introduction

1. The Promega Corporation DNA IQ™ System (DNA IQ) is a method used for the isolation (extraction) of DNA from biological material. It can be used to extract DNA from various types of biological material including blood, semen, and saliva. The method also effectively removes contaminants and inhibitors of the downstream DNA amplification (copying) process.
2. The extraction method composes three general steps: lysis, washing, and elution. The first lysis step breaks open the cell membranes, denatures (breaks apart) proteins and inactivates enzymes, to release the DNA and prevent any degradation of the DNA. In step two, the DNA IQ™ uses magnetic bead resin to bind the DNA so that the samples can be washed removing any inhibitors. Step three uses an elution buffer to remove the DNA from the beads into solution ready for downstream processing.
3. There is no recognised international best practice for a specific methodology that should be applied to the extraction of DNA from biological material and methods utilised are highly laboratory dependant. The DNA IQ™ method can be performed manually, automated using liquid handling robotics, or a combination of manual and automatic steps (usually the lysis step is performed manually, with the washing and elution steps automated).
4. At Queensland Health Forensic and Scientific Services (QHFSS), the DNA IQ™ method (version 1) was released 24 October 2007 (see FSS.0001.0080.6560) and the DNA IQ method was implemented as a fully automated process on 29 October 2007 (see Statement of Allan Russell McNevin WIT.0040.0077.0001, paragraph 263). This is supported by the statement of Thomas Nurthern (WIT.0050.002.0001, paragraphs 20-21 and also the Change Register (see statement of Justin Howes, WIT.0016.0188.0001, attachment JH-52, page 512).
5. According to the statement of Thomas Nurthern (paragraph 21), a fully manual process had been validated but was not implemented until around February 2008. Although I note the implementation of the manual method is not supported by other statements or the Change Register.
6. In order to improve the extraction of DNA from casework samples, a process with manual lysis followed by automated washing and elution (off deck lysis) was also introduced 19 March 2008 (see statement of Thomas Nurthern, paragraph 21, statement of Allan Russell McNevin, paragraph 263 and the Change Register (statement of Justin Howes, attachment JH-52, page 513).
7. In February 2008, the first case of a contamination of a sample was reported (see Opportunity for Quality Improvement (OQI) 19330, and Statement of Justin Howes, WIT.0016.0188.0001, paragraph 91). Subsequent further contamination events were identified through April, May and June (for example see OQIs 19349, 19477, 19767, 19768) and investigations conducted as contamination events were identified.
8. At a management meeting on 10 April 2008, it was decided that an Analytical Issues Log would be created to ~~of arising~~keep track of issues in the DNA IQ method (Statement Justin Howe, paragraph 96).
9. In mid-July an audit was conducted (see Audit 8227, FSS.0001.0057.3107) and the results reported in August 2008.
10. On 27 July the automated DNA IQ extraction procedure was halted and additional requirements for the review of samples processed through the automated DNA IQ method was implemented (Statement Justin Howe, paragraph 101).
11. The laboratory reverted back to the previous chelex method for DNA extraction on 28 July 2008 (Statement of Cathie Allen, WIT.0019.0016.0001, paragraph 182 and attachment CA-91, page 3137, and statement of Justin Howes attachment JH-52, page 514).

12. An external review was commissioned and conducted by Dr Theo Sloots and Dr David Whiley, who visited the laboratory on 12 November 2008 and provided a report on 14 November 2008 (Statement Justin Howes, paragraphs 104 and 125-127).
13. Advice was sought from Crown Law, which was received in December 2008 (Statement Justin Howe, paragraph 106). A meeting with the Director of Public Prosecution (DPP) was held on 4 December 2008 to ~~the DPP~~brief the DPP~~m~~ on the issue (Statement of Cathie Allen, paragraph 184)
14. Advice was received from Crown Law on 19 December 2008 regarding disclosure of adverse results. Statements were then amended to include ~~a~~to notification to readers regarding the issues with the results (Statement of Cathie Allen, paragraphs 185-186).
15. The manual method of DNA IQ was not re-implemented until 19 June 2009 and the automated process was not re-implemented until 20 August 2009 (see statement of Allan McNevin, paragraph 314).

Comments and Opinions

Question 1. Whether the methods, systems and processes in relation to using the DNA IQ instrument was consistent with international best practice when issues arose in and around 2008.

Methods

16. DNA extractions can be performed manually (off deck), via an automated liquid handling system (on deck), or by a combination of the two methods. The latter is usually conducted by manual (off deck) handling of the initial lysis steps, followed by automated liquid handling (on deck) of the remaining steps in the DNA extraction methodology.
17. Manual handling to remove the cellular material from substrates (such as swabs) into a liquid form (lysate) for subsequent automated processing, can produce more reproducible results as swabs and other physical substrates can interfere with the pipetting process in robotic platforms. This is because robotic platforms may not have the flexibility to deal with different types of substrates and their variable position in the tubes, which are not standardised sufficiently for an automated system.
18. Implementation of a method into casework should be preceded by an appropriately designed validation or verification study. Generally, if the method has been robustly validated (according to international guidelines) and successfully implemented into a laboratory elsewhere and the proposed method is unchanged from that validation, then the method only needs verification to demonstrate that the method operates as expected in the new laboratory. If the method has not been validated robustly elsewhere, then it should be validated prior to use so that the limitations and operating parameters of the method are clearly understood.
19. If the method has been demonstrated to operate as expected and produce reliable and reproducible results, then it can be implemented through appropriate training of scientists.
20. If the automated method released in October 2007 (FSS.0001.0080.6563) and the off-deck lysis method released in March 2008 (FSS.0001.0080.6644) have been appropriately validated, then they can both be considered appropriate to use.
21. The DNA IQ system is a reliable and robust method for extracting DNA from forensic samples.
22. The use of the manual and automated DNA IQ methods is within the bounds of expectation for this methodology. The DNA IQ method is designed specifically for the extraction of DNA from forensic (and paternity) samples (see https://www.promega.com.au/products/forensic-dna-analysis-ce/dna-isolation/dna-iq-system/?catNum=DC6701) and I did not identify any ~~no~~ significant deviation from the manufacturers recommendations or accepted protocols ~~was identified~~.

~~22.~~23. The use of these methods was not outside what would be considered best practice for a forensic DNA laboratory in 2008.

~~23.~~24. I note I have not had sufficient time to reviewed the validation documentation concerning the methods described in paragraph 5, and so cannot comment on the appropriateness of the validation and therefore the appropriateness of the implementation.

~~24.~~25. There is evidence to suggest that the automated method may not have been sufficiently validated when originally implemented, as documented in the External Review of Operations Report – Drs Sloots and Whiley, FSS.0001.0024.0805. The report states "*it may appear that the original issue concerning the cross-contamination of samples in the deep-well plates could have been prevented if this change in procedure had been fully validated against existing protocol when the new method was introduced.*" This would indicate that the validation of the automated method could have been more robust.

Training

~~25.~~26. Training should be consistent with the Methods and Standard Operating Procedures (SOPs) used in the laboratory and be fit for purpose to demonstrate scientists have been trained sufficiently to properly follow and understand methods and SOPs. Training should culminate in the scientist being authorised as competent (if appropriate) to perform the relevant tasks. Training should also be ongoing to ensure continued competence of scientists.

~~26.~~27. The QHFSS training module for the Automated DNA Extraction with the DNA IQ™ Kit (document 24896V1, dated 31/10/2007, FSS.0001.0080.6495) required scientists to demonstrate the successful completion (under the guidance of a trainer) of five automated sample extraction batches and 25 written theory-based questions. These are mapped against Key Performance Criteria (KPCs), which have been determined as part of the development of the training module, to represent key aspects of the method/SOP that the scientist should understand. Demonstration of the successful extraction of five extraction batches containing a routine number of samples is sufficient to train and demonstrate competency in the method. However, this is only true if the batches are representative of any variations in how the methods may be performed (e.g., slight changes in the procedure). If the variations in the methods are significantly different (e.g., manual versus automated processing), then further replicates should be included.

~~27.~~28. This approach was included in the requirements for Demonstrated Ability (Part A) for batch extractions in the next version of the extraction training module (see document 24896V2, dated 05/08/2008, FSS.0001.0080.6502), which introduced off-deck lysis to the training for automated DNA extraction.

~~28.~~29. I note that the off-deck lysis was introduced in March 2008, but the training manual was not updated until August 2008. It is best practice to keep the training manuals consistent with the current methodology and practices. This would ensure that there is a documented process for the scientists to maintain their competency in the relevant testing methods. I note there may have been training provided in the revised method that is not captured in the information provided.

~~29.~~30. The inclusion of a requirement to demonstrate competence in the manual DNA IQ™ method was introduced into version three of the training manual (see document 24896V3, dated 14/08/2009, FSS.0001.0080.6511). I note the manual method was implemented 19 June 2009.

~~30.~~31. As the off-deck lysis process follows the same general steps as the full manual process, only a small amount of training should have been required.

~~31.~~32. It should be noted that subsequent changes to the method post demonstration of competence should be clearly communicated and understood by scientists. It is evident that

Commented [SH1]: This is my understanding from our conversation and your edits, but please confirm.

Commented [SH2]: Again, please confirm this is accurate. Or, did the validation material we sent you on 18/10/2022 not cover what you needed?

some staff members were not comfortable with the level of continued training in changes to the methods/SOPs (see FSS.0001.0057.3107).

~~32.~~33. The contamination events identified in FSS.0001.0057.3107 and in OQIs 18580, 19349, 19477, 19768, and 20231 appear to be complex in nature and the exact origin was unable to be fully resolved, however a number of possible sources were identified (see FSS.0001.0024.0805 for summary). It is unlikely that a revised training program would have prevented these contamination events.

~~33.~~34. Extraction controls should be checked for each extraction batch prior to the sample results being released to the case reporting scientists and subsequent communication to the client. Therefore, it would be anticipated that any contamination events would be identified relatively quickly and steps to identify the source and mitigate further events conducted. From the OQI records, it can be seen that most contamination events were identified "real-time", appropriately recorded, and investigated.

~~34.~~35. There should also be a clear process for staff to raise issues and seek remedies. I note that Audit Report 8227 (FSS.0001.0060.4883) details numerous comments from staff regarding issues with the automated extraction process. These include issues with the tip chute receptacle (2.4.13.6), the plate not fitting into the deck correctly (2.4.13.8, 3.10), and condensation on the top of wells (page 12). These issues are more likely related to the contamination events. As they have been identified and raised by staff as part of the review, it supports the contention that staff training is adequate and that the contamination issues stem from equipment/consumable related failures.

Environmental Monitoring

~~35.~~36. The QHFSS Environmental Monitoring procedure (23602V3) details accidental contamination, monthly and yearly environmental monitoring sampling requirements to identify potential surface contamination, including specific surface areas to be tested.

~~36.~~37. The Anti Contamination Procedure (22857V2) details laboratory layout, personal protective equipment (e.g., laboratory coats, gloves, masks) requirements, monthly clean, and environmental monitoring.

~~37.~~38. Records were provided for the results of the environmental monitoring sampling and DNA testing; however, it is not clear whether critical areas are tested more frequently or whether all areas listed in the environmental monitoring procedure have actually been tested. It is recommended that a system be put in place to track that identified critical areas have been tested as appropriate. For example, from the excel spreadsheet (FBE-07-08) the water bath handle was tested regularly, however the clothesline was only tested once. This may be due to a risk-based approach; however, this is unclear as it is not documented.

~~38.~~39. Overall, the testing regime is as would be expected in 2008 considering the level of sensitivity of the testing methods and the monitoring controls considered good practice at the time. Modern testing systems are considerably more sensitive, which has increased the awareness of and need for environmental monitoring in recent years.

~~39.~~40. There is however limited information in the procedure documents regarding the deep clean process. The procedure states that the deep clean should *"…include cleaning of items not cleaned during the normal examination process i.e., chairs, computers, fridge handles etc*." It is recommended that further information should be included in the procedure detailing what should be cleaned in the deep clean and how. I note I was not provided with any records of the deep cleans. Records of deep cleans should be maintained.

40.41. When considering best practice, I would expect to see greater clarity concerning the deep clean procedure and records of them being undertaken. Monthly deep cleans is an appropriate timeframe for this activity.

Question 2. Whether the identification, investigation/s and resolution of the DNA IQ issues was appropriate and consistent with international best practice

41.42. Considerable work has been conducted by QHFSS in reviewing the issues experienced in relation to the automated DNA extraction process. This work is of a high standard. The identification, investigation and recommendations undertaken by QHFSS were appropriate and consistent with best practice.

42.43. I note there were some delays in the communication of the issues to the DPP, as a meeting was not held with the DPP until 4 December 2008. This may have been due to the need to work through governance processes including an external review and seeking advice from Crown Law. Therefore, whilst the communication was delayed, this timeframe is not outside the timeframe expectations for an issue of this significance.

43.44. Quality assurance should encompass a principle of continuous improvement. Therefore, methods and systems should be regularly reviewed to identify further opportunities for improvement. This should be based in a quality culture where any errors provide learnings and staff feel comfortable to identify errors, seek solutions, and opportunities for learning in a positive focussed environment. A punitive quality environment will promote errors to be hidden and not recorded, so that the learning and quality improvement will not be identified. All human-based systems will incur errors and so it is important to foster an environment where these errors can be easily identified and rectified.

44.45. **Audit 8227** (FSS.0001.0057.3107) was very thorough. I note nine extraction batches were reviewed as follows:

- Off-deck (retained supernatant) x 1
- Off-deck (no retained supernatant) x 3
- STORstar lysate x 1
- Automated DNA IQ (Casework), elution x 1
- Automated DNA IQ (Reference) x 3

45.46. I would have preferred to see at least two of each type of extraction process reviewed as part of the audit.

46.47. I also note that it is not clear which scientists conducted the extraction batches. It would have been useful to identify the scientists (potentially using a code) to ensure a broad range of the scientists were reviewed. This would facilitate the identification of any user differences.

47.48. The recommendations noted in the audit report 8227 were appropriate.

48.49. The **extraction batch audit** (FSS.0001.0060.5715) was useful in that it identified further contamination events and a quality improvement (Batch Comparison Macro) to check samples within batches to each other.

49.50. It is not clear from the **Audit 9642** (FSS.0001.0060.5699) report, what was actually conducted as part of the audit as the method is not detailed. Whilst the findings and observations (which are appropriate) indicated that the audit may have been robust and included the observation of an extraction process, this cannot be ascertained for certain. I would expect that the audit report would contain more information regarding how the audit was conducted and what methodology was used. The audit report should contain sufficient information that it could be replicated by another scientist. This ensures there is sufficient information to appropriately review the audit report.

~~50.~~51. It is therefore difficult to comment on the appropriateness of the audit. The recommendations contained in the audit report appear reasonable.

~~51.~~52. The **report of Drs Sloots and Whiley** (FSS.0001.0024.0805) provides insufficient detail to comment on the appropriateness of the review. However, the findings contained in the report appear appropriate.

Question 3. Whether the amended methods, systems and processes implemented for using the DNA IQ instrument was consistent with international best practice

~~52.~~53. The manual method of DNA IQ was re-implemented on 19 June 2009 and the automated process was re-implemented on 20 August 2009 (see statement of Allan McNevin, paragraph 314).

~~53.~~54. If the amended methods have been demonstrated through validation/verification to operate as expected and produce reliable and reproducible results, then they can be considered suitable for implementation and use.

~~54.~~55. I note that QHFSS returned to their previously validated chelex DNA extraction method (see statement of Allan McNevin, paragraph 314, statement of Cathie Allen, paragraph 182 and attachment CA-91, page 3137, and statement of Justin Howes attachment JH-52, page 514), whilst they revalidated the DNA IQ method. Whilst the chelex method is an inferior method to the DNA IQ, I do not believe there would have been an alternative process that could have been employed at the time that would have allowed the QHFSS laboratory ~~m~~ to continue using the DNA IQ method.

~~55.~~56. The research conducted into the root cause of the contamination was extremely thorough and it is evident that the cause was complex and multi sourced. Whilst there were a few instances of human error, the main causes of the contamination are equipment related and therefore more systemic. A full review was therefore required. This was the approach taken by QHFSS and therefore reasonable and appropriate.

~~56.~~57. It was noted that not all documents were not dated, or version controlled (it is however noted that documents may have been dated through an electronic record storage system). It is strongly recommended that all documents and reports should contain date and version control information within the text of the document to align with best practice.

Question 4. If any deficiency in the methods, systems or processes for use of the DNA IQ instrument or the resolution of the issue that arose in and around 2008 is found, the impact of that deficiency on:

a. **Whether the obtaining of a useable DNA profile from a sample by the laboratory was reliable and accurate;**

~~57.~~58. Given the number of contamination events~~,~~ that occurred when using the DNA IQ method in 2007-2008, it could be ~~considered~~ that the method was not sufficiently validated. It is surprising that the level of contamination was not identified during the validation.

~~58.~~59. I note that the contamination events were almost all related to within extraction batch (well to well) contamination, in that contamination events did not generally go across extraction batches. This means that batches can be checked for well-to-well contamination and determine which samples have DNA results that on the balance of probabilities not as a result of contamination (for example if the profile is unique within the batch)

~~59.~~60. Samples and DNA results whose results cannot be demonstrated to not have originated from a contamination event cannot be relied upon.

~~60.~~61. Samples that have DNA profile results that have undergone the relevant quality assurance checks, including the checking of relevant control samples (e.g. extraction reagent blank, positive and negative controls), could be considered reliable and accurate.

~~61.~~62. QHFSS went through this process to determine which results were compromised and which results could be relied upon. The~~re~~ process for doing this analysis was appropriate.

b. Whether DNA profiles obtained by the laboratory are reliable and accurate.

~~62.~~63. QHFSS completed an extensive review of the results generated from the DNA IQ method 2007-2008. Given the amount of work conducted and the thoroughness of the work, once this was completed, the remaining results that have undergone the relevant quality assurance checks, including the checking of relevant control samples (e g. extraction reagent blank, positive and negative controls), could be considered reliable and accurate.

~~63.~~64. I did not find any significant failings that would indicate that the final results released were not reliable.

Professor Linzi Wilson-Wilde OAM

Appendix 1 – Amended Instructions to expert

Amended Instructions to expert

Linzi Wilson-Wilde

12 October 2022

Background

1. The Commission of Inquiry into DNA testing in Queensland was announced by the Queensland Premier on 6 June 2022 and commenced on 13 June 2022.

2. The Commission was prompted by a number of issues raised publicly regarding the adequacy of forensic DNA testing undertaken at the Queensland Health Forensic and Scientific Services (QHFSS).

3. General and specific concerns have been raised regarding cross contamination of samples using DNA IQ testing instrument in the QHFSS DNA Analysis Unit.

4. In and around 2008, it was discovered that the seals from the DNA IQ products (consumables) in the extraction phase were leading to cross-contamination amongst different, unrelated samples. The issue was documents in various OQIs. Once the laboratory discovered the issue, there was a retrospective assessment of all the samples that were processed with the relevant consumables. The issue affected many batches of samples.

5. QHFSS conducted both an internal audit, and procured an external audit, of the issue.

Overview of engagement

6. You have been engaged to review the documentation provided and determine whether the scientific testing process for use of the DNA IQ instrument was scientifically sound and conducted in accordance with international best practice.

7. In addition, you will also consider the audit and investigation reports and whether the analysis employed was scientifically sound and in accordance with international best practice.

Instructions

8. You are instructed to:

   (a) consider the briefed material;

(b) provide advice to the Commission as to:

1. Whether the methods, systems and processes in relation to using the DNA IQ instrument was consistent with international best practice when issues arose in and around 2008, including consideration of the following particular issues:
    i. Whether the process that QHFSS introduced, first using automated liquid handler platforms in October 2008 and then commencing processing with 'off deck lysis' in March 2008, to perform automated DNA IQ extractions was consistent with international best practice
    ii. Whether adequate training following the implementation of DNA IQ could have prevented the contamination issue, with reference to Audit 8227 "Process Audit of Automated DNA IQ System (including Off-Deck Lysis)" (3.3 - Audit Report - 'Audit 8227. Process audit of automated DNA IQ System (including off-deck lysis)' (Cheng, Clause.pdf where:
        - it was identified that "KPC's for the off-deck lysis and STORstar components are not included in the DNA IQ training module, but are integral to the DNA IQ protocol" at [3.1];
        - it was identified that "some staff members … feel that they are frequently exposed to changes in protocols and methods, and are required to adapt quickly" at [3.12]; and
        - a number of recommendations were made relating to training at [4.1]-[4.7].
    iii. Whether the monitoring of environmental conditions and protocols relating to laboratory maintenance and cleaning of DNA IQ instruments between October 2007 and May 2009 were consistent with international best practice.
2. Whether the identification, investigation/s and resolution of the DNA IQ issues was appropriate and consistent with international best practice, including consideration of the following particular issues:
    i. Whether Audit 8227 was an appropriate response to the OQIs raised and carried out in a manner consistent with international best practice
    ii. Whether the recommendations of Audit 8227 were appropriate and whether other recommendations would be expected or preferred.
    iii. Whether Audit 8752 was an appropriate response to the ongoing DNA IQ contamination issue and carried out in a manner consistent with international best practice;
    iv. Whether Audit 9642 was an appropriate response to the ongoing DNA IQ contamination issue and carried out in a manner consistent with international best practice;

v. Whether the recommendations of Audit 9642 were appropriate and whether other recommendations would be expected or preferred.

vi. Whether the recommendations from Drs Sloots and Whiley's report were appropriate and whether other recommendations would be expected or preferred.

vii. Whether QHFSS' response to the other audits and reports were appropriate and consistent with international best practice.

3. Whether the amended methods, systems and processes implemented for using the DNA IQ instrument was consistent with international best practice;
4. If any deficiency in the methods, systems or processes for use of the DNA IQ instrument or the resolution of the issue that arose in and around 2008 is found, the impact of that deficiency on:
    i. Whether the obtaining of a useable DNA profile from a sample by the laboratory was reliable and accurate;
    ii. Whether DNA profiles obtained by the laboratory are reliable and accurate.

9. To provide that advice, please:

(a) consider all the enclosed material;

(b) discuss with Counsel Assisting the Commission the adequacy of the instructions and brief to be able to provide the advice sought by **14 October 2022**;

(c) provide a draft report for discussion with Counsel Assisting the Commission, by ~~**28 September**~~ **14 October 2022**; and

(d) provide a final report no later than ~~**3**~~ **17 October 2022**.

Appendix 2 - Index of information provided and considered

No.	Document	Date	Inquiry Reference
1.	**Letter to Expert**		
1.1	Letter of instructions to Linzi Wilson-Wilde		
2.	**Terms of Reference**		
2.1	Terms of Reference - Commission of Inquiry into DNA Testing in Queensland	10/06/22	
3.0	**Audits/Reviews**		
3.1	Report – 'Investigation into a partial DNA profile negative extraction control sample' (Cheng, McNevin)	Undated	FSS.0001.0057.3100
3.1a	Report – A review of DNA extraction control results obtained in the first six months of 2008' (Harvey & McNevin)	Undated	FSS.0001.0065.5065
3.1b	Report – A review of DNA extraction control results obtained in the second six months of 2008' (Harvey & McNevin)	Undated	FSS.0001.0060.5790
3.2	Audit 8227 Checklist	Undated	FSS.0001.0060.4876
3.3	Audit Report – 'Audit 8227. Process Audit of the Automated DNA IQ System (including Off-Deck Lysis) (Cheng, Clausen, Muharam)	Aug 2008	FSS.0001.0057.3107
3.4	Presentation – Audit 8227: Process audit of the DNA IQ System	17/09/08	FSS.0001.0060.4883
3.5	Audit Report – Extraction Batch Audit	Sep 2008	FSS.0001.0060.5715
3.5a	Presentation – Extraction Batch Audit	17/09/08	FSS.0001.0060.5730
3.5b	Report (Desley Pitcher) – DNA Extraction Modifications	03/10/08	FSS.0001.0070.3708
3.5c	Report (Desley Pitcher) – DNA Extraction Modifications	06.11.08	FSS.0001.0070.3710
3.6	External Review of Operations Report – Drs Sloots & Whiley	14/11/08	FSS.0001.0024.0805
3.7	Presentation – "Update on DNA Analysis Issues"	15/12/08	FSS.0001.0024.4152
3.8	NATA Report on reassessment (Item 4.9.1)	27/01/09	FSS.0001.0024.3564

No.	Document	Date	Inquiry Reference
3.9	Audit Report – 'Audit 9642: DNA IQ method of extracting DNA from casework and reference samples audit' (Sultana & Brady)	Aug 2009	FSS.0001.0060.5699
3.10	Audit #9642 Response		FSS.0001.0056.7885
4.0	**OQIs/Audit Entries**		
4.1	#18580	10/01/08	FSS.0001.0002.2199
4.2	#19349	23/04/08	FSS.0001.0002.2245
4.3	#19477	12/05/08	FSS.0001.0002.2268
4.4	#19767	14/06/08	FSS.0001.0002.2279
4.5	#19768	14/06/08	FSS.0001.0002.2282
4.6	#20231	24/07/08	FSS.0001.0002.2310
4.6a	#8752 (Audit of all extraction batches)	28/07/08	FSS.0001.0056.7891
4.7	#20351	08/08/08	FSS.0001.0002.2312
4.8	#20367	11/08/08	FSS.0001.0002.2320
4.9	#20368	11/08/08	FSS.0001.0002.2324
4.10	#20369	11/08/08	FSS.0001.0002.2328
4.11	#20422	20/08/08	FSS.0001.0002.2333
4.12	#20432	21/08/08	FSS.0001.0002.2336
4.13	#20437	21/08/08	FSS.0001.0002.2340
4.14	#20615	04/09/08	FSS.0001.0002.2344
4.15	#20617	05/09/08	FSS.0001.0002.2348
4.16	#20690	15/09/08	FSS.0001.0002.2353
4.17	#20925	06/10/08	FSS.0001.0002.2359
4.18	#21050	13/10/08	FSS.0001.0002.2366
4.19	#21222	28/10/08	FSS.0001.0002.2373
4.20	#21309	06/11/08	FSS.0001.0002.2381
4.21	#9175 (DNA IQ External Audit – Sloots & Whiley)	12/11/08	FSS.0001.0056.7799

No.	Document	Date	Inquiry Reference
4.22	#21589	05/12/08	FSS.0001.0002.2407
4.23	#21718	15/12/08	FSS.0001.0002.2418
4.24	#22438	12/03/09	FSS.0001.0002.2448
4.25	#9642 (DNA IQ Follow up audit)	24/08/09	FSS.0001.0060.5799
5.0	**Correspondence**		
5.1	Meeting Minutes (Biology Team) (see p. 6, 3.8)	10/04/08	FSS.0001.0003.2453
5.2	Meeting Minutes (see 2.1 and 2.2)	02/06/08	FSS.0001.0003.5587
5.3	Meeting Minutes	23/06/08	FSS.0001.0003.5593
5.4	Meeting Minutes	30/06/08	FSS.0001.0003.5597
5.5	Meeting Minutes	11/07/08	FSS.0001.0003.5571
5.6	Memorandum – Vanessa Ientile – DNA IQ Extractions	14/07/08	FSS.0001.0024.0802
5.7	Meeting Minutes	21/07/08	FSS.0001.0003.5581
5.8	Meeting Minutes	04/08/08	FSS.0001.0003.5560
5.8a	Management Team Meeting Minutes	05/08/08	FSS.0001.0079.5294
5.9	Meeting Minutes (Analytical Team) (see p. 3, 3.5)	11/08/08	FSS.0001.0002.6861
5.10	Meeting Minutes	12/08/08	FSS.0001.0003.5548
5.10a	Meeting Minutes (Analytical Team) (see p. 2, 3.5)	18/08/08	FSS.0001.0002.6912
5.11	Meeting Minutes	21/08/08	FSS.0001.0003.5554
5.12	Meeting Minutes	08/09/08	FSS.0001.0003.5615
5.13	Meeting Minutes	15/09/08	FSS.0001.0003.5622
5.13a	Meeting Minutes	15/09/08	FSS.0001.0002.6896
5.14	Meeting Minutes	30/09/08	FSS.0001.0003.5629
5.14a	Meeting Minutes (Forensic Reporting and Intelligence Team Meeting)	02/10/08	FSS.0001.0070.3907
5.15	Meeting Minutes	07/10/08	FSS.0001.0003.5605
5.16	Meeting Minutes	20/10/08	FSS.0001.0003.5610

No.	Document	Date	Inquiry Reference
5.16a	Presentation – MP11 Enhancements	13/11/08	FSS.0001.0070.3925
5.17	Meeting Minutes	09/03/09	FSS.0001.0002.7217
5.18	Meeting Minutes	26/03/09	FSS.0001.0003.2867
5.19	Correspondence from Cathie Allen to Department of Justice and Attorney-General	May 2009	DPP.0052.0009.0004
6.0	**Spreadsheets**		
6.1	Issues Log – 2007 – 2009		FSS.0001.0010.8973
6.2	List of OQI's – 2003 – 2022		FSS.0001.0002.1723
6.3	Audit 8227 OQIs		FSS.0001.0060.5049
6.4	Analytical Issues Log		FSS.0001.0010.8992
6.5	Minor Changes Log		FSS.0001.0002.3879
7.0	**Miscellaneous**		
7.1	Technical Manual – DNA IQ Casework Pro Kit for Maxwell 16	2010	FSS.0001.0010.6421
7.2	Correspondence from David Neville to Michael Keller re: potential contamination	26/02/09	QPS.0001.1117.0001
8.0	**SOPs**		
8.1	SOP – DNA IQ Method of Extracting DNA from casework and reference samples		FSS.0001.0070.4340
9.0	**Supplementary Material**		
9.1	Additional OQIs: • OQI #18893 – FSS.0001.0002.2210 • OQI #19213 – FSS.0001.0002.2240 • OQI #19330 – FSS.0001.0002.2242 • OQI #21062 – FSS.0001.0002.2368 • OQI #21715 – FSS.0001.0002.2416 • OQI #22882 – FSS.0001.0002.2507		
9.2	Additional correspondence: • Management Team Minutes (Extraordinary meeting – 140708) – FSS.0001.0080.2579		

No.	Document	Date	Inquiry Reference
	• Email from Vanessa Ientile (28 July 2008) – FSS.0001.0080.2646 • Management Team Minutes (Extraordinary meeting – 28 July 2008) – FSS.0001.0080.2657 • Audit 8827 Meeting Notes – FSS.0001.0080.2861		
9.3	Additional Investigation Reports: • Investigation into contamination of negative and positive extraction control re: OQI 19349 • Investigation into mixture found in FTA evidence sample re: OQI 19767 • Investigation into negative control with peaks re: OQI 19768 • Investigation into negative extraction control with a partial DNA profile re: OQI 20231 • Investigation into positive control with extra peaks		FSS.0001.0080.2541 FSS.0001.0080.2591 FSS.0001.0080.2651 FSS.0001.0080.2750 FSS.0001.0080.3123
9.4	Extra Batch Contamination Notes: • Extraction Batch Contamination – OQI #20422 • Extraction Batch Contamination – OQI #20437 • Extraction Batch Contamination – OQI #20615 • Extraction Batch Contamination – OQI #20690 • Extraction Batch Contamination – OQI #20925 • Extraction Batch Contamination – OQI #21050 • Extraction Batch Contamination – OQI #21222 • Extraction Batch Contamination – OQI #21309		FSS.0001.0080.2773 FSS.0001.0080.2780 FSS.0001.0080.2790 FSS.0001.0080.2815 FSS.0001.0080.2824 FSS.0001.0080.2833 FSS.0001.0080.2836 FSS.0001.0080.2843
9.5	SOPs – Environmental Monitoring and Anti-Contamination Procedure		
9.6	SOPs – DNA IQ Extraction with the DNA IQ Kit Training Module (all versions): 1. #24896v1 (31.10.07) – FSS.0001.0080.6495		

No.	Document	Date	Inquiry Reference
	2. #24896v2 (05.08.08) – FSS.0001.0080.6502 3. #24896v3 (14.08.09) – FSS.0001.0080.6511 4. #24896v4 (16.05.11) – FSS.0001.0080.6521 5. #24896v5 (10.12.12) – FSS.0001.0080.6532 6. #24896v6 (30.03.15) – FSS.0001.0080.6541 7. #24896v7 (07.11.16) – FSS.0001.0080.6551		
9.7	SOPs – Automated DNA IQ Method of Extracting DNA: 1. #24897v1 (24.10.07) – FSS.0001.0080.6560 2. #24897v2 (11.01.08) – FSS.0001.0080.6622 3. #24897v3 (27.03.08) – FSS.0001.0080.6644 4. #24897v4 (21.05.08) – FSS.0001.0080.6677 5. #24897v5 – FSS.0001.0080.6710 6. #24897v6 (13.08.09) – FSS.0001.0080.6734 7. #24897v7 (09.11.10) – FSS.0001.0080.6759 8. #24897v8 (27.06.12) – FSS.0001.0080.6789 9. #24897v9 (03.01.14) – FSS.0001.0080.6816 10. #24897v10 (12.06.15) – FSS.0001.0080.6574 11. #24897v11 (30.01.17) – FSS.0001.0080.6604		
9.8	MPII Maintenance Logs and Cleaning Diaries: • MPII ExtA Calibration 2007 • MPII ExtA Diary 2007 Reference • MPII ExtA Diary 2008 • MPII ExtA Diary 2009 (Jan-May) • MPII ExtA Maintenance Log 2007 • MPII ExtA Maintenance Log 2008 • MPII ExtA Maintenance Log 2009 • MPII ExtB Calibration 2007 • MPII ExtB Diary 2007 (Oct-Dec) • MPII ExtB Diary 2008 • MPII ExtB Diary 2009 (Jan-May) • MPII ExtB Maintenance Log 2007 • MPII ExtB Maintenance Log 2008		

No.	Document	Date	Inquiry Reference
	• MPII ExtB Maintenance Log 2009		
9.9	Statement of Catherine Allen, only references: • Statement (paragraphs [168] – [198]; and • Exhibits CA-87 (start p 3050) – CA-121 (end p 3322)		WIT.0019.0016.0001
9.10	Statement of Justin Howes, only references: • Statement (paragraphs [89] – [136]); and • Exhibits JH-41 (start p 398) – JH-58 (ending p 606)		WIT.0016.0188.0001
9.11	Records of environmental monitoring: • FBE Jan-May 2009 • Spreadsheet FBE 07-08 • FBE0107 and FBE0207 Data		
9.12	Statement of Allan McNevin, only references: • Statement (paragraphs [262] – [317]); and • Exhibits ARM 104 (start 1410) – ARM 119 (end p 1840).		WIT.0040.0077.0001
9.13	Statement of Thomas Nurthern		WIT.0050.002.0001 WIT.0050.0003.0001
10.0	**Further Supplementary Material re validations**		
10.1	Response to the COI request for written information re validation of DNA IQ methods	18.10.2022	
10.2	QIS 24897 V1		FSS.0001.0080.6560
10.3	Project 9. Report on the Evaluation of Commercial DNA Extraction Chemistries		
10.4	Project 13. Report on the Verification of an Automated DNA IQ™ Protocol using the MultiPROBE® II PLUS HT EX with Gripper™ Integration Platform		
10.5	QIS 24897 V3		FSS.0001.0080.6644

No.	Document	Date	Inquiry Reference
10.6	Project 11. Report on the Validation of a manual method for Extracting DNA using the DNA IQ™ System (PDF version)		
10.7	Project 21. A Modified DNA IQ™ Method Consisting of Off-Deck Lysis to Allow Supernatant Retention for Presumptive Identification of α-Amylase (scanned version)		
10.8	Project 22. A Modified DNA IQ™ Method for Off-Deck Lysis Prior to Performing Automated DNA Extraction (scanned and draft versions)		
10.9	Emails (x4) re off deck lysis reports		
10.10	Project 13 verification of extraction chemistry (word doc)		

Appendix 3 – Curriculum Vitae Linzi Wilson-Wilde

LWW-12

Fletcher, Caitlin [redacted]

From: Linzi Wilson-Wilde <[redacted]>
Sent: Thursday, 26 October 2023 4:36 PM
To: Fletcher, Caitlin [redacted]; Linzi Wilson-Wilde
Subject: Fwd: Revised report - Linzi Wilson-Wilde

Caution: External email.

Sent from my iPhone

Begin forwarded message:

From: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
Date: 20 October 2022 at 14:26:44 AEST
To: Linzi Wilson-Wilde <[redacted]>
Cc: Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>, Jac Thong <jac.thong@dnainquiry.qld.gov.au>
Subject: RE: Revised report - Linzi Wilson-Wilde

Dear Linzi

I spoke to Michael, he would like you to do the review of the validation including with the DNAIQ manual. Returning the finalised report to us tonight is fine.

Ellie, Jac – could you arrange to find the correct version of the manual and provide to Linzi please?

Thanks
Susan

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

From: Linzi Wilson-Wilde <[redacted]>
Sent: Thursday, 20 October 2022 12:10 PM
To: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
Subject: Re: Revised report - Linzi Wilson-Wilde

That would be great. L

Sent from my iPhone

On 20 Oct 2022, at 12:26, Susan Hedge <susan.hedge@dnainquiry.qld.gov.au> wrote:

Ideally this afternoon, but I don't want you to rush it if you are not sure of the conclusions, and happy to give more time.

Would you like me to give you a call? I can step outside the hearings as I am not questioning now.

Thanks
Susan

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

<image001.jpg>

From: Linzi Wilson-Wilde <[redacted]>
Sent: Thursday, 20 October 2022 11:54 AM
To: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
Subject: Re: Revised report - Linzi Wilson-Wilde

Dear Susan,
Can I confirm when you need this revised statement by?
I just have a couple of concerns.
Linzi

Sent from my iPhone

> On 20 Oct 2022, at 11:50, Susan Hedge <susan.hedge@dnainquiry.qld.gov.au> wrote:
>
> Dear Linzi,
>
> One final thing, could you add a couple of sentences dealing with one issue you raised with us on the phone on Tuesday:
>
> 1. The lack of information in some OQIs which may have made it harder to identify systemic issues.
>
> Thanks
> Susan
>
> Susan Hedge

Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

<image001.jpg>

From: Wilson-Wilde, Linzi (AGD) <[redacted]>
Sent: Thursday, 20 October 2022 10:48 AM
To: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>; Linzi Wilson-Wilde <[redacted]>; Jac Thong <jac.thong@dnainquiry.qld.gov.au>; Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>
Subject: RE: Revised report - Linzi Wilson-Wilde

UNOFFICIAL

Thank you . Updated.
I will have the report to you shortly.
All the best, Linzi

Prof Linzi Wilson-Wilde OAM PhD (she/her) | Director

Forensic Science SA | Attorney-General's Department
Professor of Forensic Science | Flinders University
E [redacted] | www.agd.sa.gov.au
P [redacted]
M [redacted]

<image002.jpg>

<image003.jpg>

From: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
Sent: Thursday, 20 October 2022 10:57 AM
To: Wilson-Wilde, Linzi (AGD) <[redacted]>; Linzi Wilson-Wilde <[redacted]>; Jac Thong <jac.thong@dnainquiry.qld.gov.au>; Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>
Subject: RE: Revised report - Linzi Wilson-Wilde

Dear Linzi

I just noticed one further thing. In para [2], I believe “composes” should be “comprises”.

Thanks
Susan

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

<image001.jpg>

From: Susan Hedge
Sent: Thursday, 20 October 2022 10:02 AM
To: Wilson-Wilde, Linzi (AGD) <[redacted]>; Linzi Wilson-Wilde <[redacted]>; Jac Thong <jac.thong@dnainquiry.qld.gov.au>; Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>
Subject: RE: Revised report - Linzi Wilson-Wilde

Thank you Linzi. I really appreciate your hard work on this, particularly on tight timeframes.

Please find attached the marked up version with our suggested changes and comments. They are all fairly minor, except for one issue about the validation documents.

If you are content, could you finalise and send back to us?

You can leave your CV as a separate PDF, and we can combine at this end if that suits.

Given the thoroughness of your report, we may not need oral evidence on this topic. We will let you know later today.

Thanks
Susan

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

<image001.jpg>

From: Wilson-Wilde, Linzi (AGD) <[redacted]>
Sent: Thursday, 20 October 2022 1:30 AM
To: Linzi Wilson-Wilde <[redacted]>; Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>; Jac Thong <jac.thong@dnainquiry.qld.gov.au>; Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>
Subject: Revised report - Linzi Wilson-Wilde
Importance: High

UNOFFICIAL

Dear All,
Please find attached the updated draft report. I have attached my CV. Any advice on how I can embed a PDF into a word document would be greatly appreciated!
I may be better off waiting until the report is finalised and combining the two PDFs.
Let me know what changes you would like.
All the best, Linzi

M [redacted]

Linzi Wilson-Wilde

Subject: Fwd: Summary of how and when OQIs relating to DNA IQ raised

Sent from my iPad

Begin forwarded message:

> **From:** Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
> **Date:** 18 October 2022 at 9:57:38 pm AEDT
> **To:** Linzi Wilson-Wilde <[redacted]>
> **Cc:** Jac Thong <jac.thong@dnainquiry.qld.gov.au>, Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>
> **Subject: Summary of how and when OQIs relating to DNA IQ raised**
>
> Dear Linzi
>
> Please find attached table prepared by Eleanor regarding how each of the OQIs were raised.
>
> Eleanor notes “the column “Brief description of how issue raised and whether appears to be real time” is simply my interpretation of the report so care should be taken relying solely on that column.”
>
> I hope that and Jac’s chronology assist.
>
> Thanks
> Susan

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email:
susan.hedge@dnainquiry.qld.gov.au

confirmed in writing. The opinions expressed in this email are those of the author and do not necessarily represent the views of the State of Queensland. This email is confidential and may be subject to a claim of legal privilege. If you have received this email in error, please notify the author and delete this message immediately

Fletcher, Caitlin [redacted]

From: Linzi Wilson-Wilde <[redacted]>
Sent: Monday, 9 October 2023 2:40 PM
To: Linzi Wilson-Wilde
Subject: Fwd: Revised report - Linzi Wilson-Wilde

Follow Up Flag: Follow up
Flag Status: Completed

Begin forwarded message:

From: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
Subject: RE: Revised report - Linzi Wilson-Wilde
Date: 21 October 2022 at 8:32:10 am AEST
To: "Wilson-Wilde, Linzi (AGD)" <[redacted]>, Linzi Wilson-Wilde <[redacted]>, Jac Thong <jac.thong@dnainquiry.qld.gov.au>, Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>
Cc: James Mann <james.mann@dnainquiry.qld.gov.au>

Thank you Linzi. Report is good, thank you. We have disclosed to the parties.

We are likely to call you at 2.30pm Brisbane time, if you could put that in your diary, until 4.30pm.

James is working on your contracts and invoices, my apologies for any delay.

Thanks
Susan

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

From: Wilson-Wilde, Linzi (AGD) <[redacted]>
Sent: Thursday, 20 October 2022 10:30 PM
To: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>; Linzi Wilson-Wilde <[redacted]>; Jac Thong <jac.thong@dnainquiry.qld.gov.au>; Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>
Subject: RE: Revised report - Linzi Wilson-Wilde

UNOFFICIAL

Dear Susan,

Please find attached final report.

Please note, I did not include any of the OQI information as when I delved into the relevant OQIs, they pointed to other OQIs, which explained why they had limited information (e.g 20432 and 21050).

Let me know if there are problems with the report.

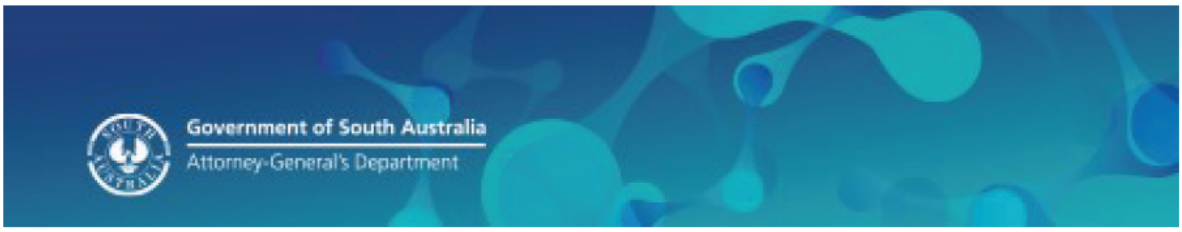
I will be free tomorrow afternoon after 1pm.

Also, would it be possible to get someone to send me all of my fully executed contracts. I have only received a couple of them. As none of the invoices have been paid, I would like to get a copy of the contracts so that I have a record.

Many thanks, Linzi

Prof Linzi Wilson-Wilde OAM PhD (she/her) | Director

Forensic Science SA | Attorney-General's Department
Professor of Forensic Science | Flinders University
E [redacted] | www.agd.sa.gov.au
P + [redacted]
M [redacted]



From: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
Sent: Thursday, 20 October 2022 11:51 AM
To: Wilson-Wilde, Linzi (AGD) <[redacted]>; Linzi Wilson-Wilde <[redacted]>; Jac Thong <jac.thong@dnainquiry.qld.gov.au>; Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>
Subject: RE: Revised report - Linzi Wilson-Wilde

Dear Linzi,

One final thing, could you add a couple of sentences dealing with one issue you raised with us on the phone on Tuesday:

1. The lack of information in some OQIs which may have made it harder to identify systemic issues.

Thanks
Susan

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

From: Wilson-Wilde, Linzi (AGD) <[redacted]>
Sent: Thursday, 20 October 2022 10:48 AM
To: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>; Linzi Wilson-Wilde <[redacted]>; Jac Thong <jac.thong@dnainquiry.qld.gov.au>; Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>
Subject: RE: Revised report - Linzi Wilson-Wilde

UNOFFICIAL

Thank you . Updated.
I will have the report to you shortly.
All the best, Linzi

Prof Linzi Wilson-Wilde OAM PhD (she/her) | Director

Forensic Science SA | Attorney-General's Department
Professor of Forensic Science | Flinders University
E [redacted] | www.agd.sa.gov.au
P [redacted]
M [redacted]

From: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
Sent: Thursday, 20 October 2022 10:57 AM

To: Wilson-Wilde, Linzi (AGD) <[redacted]>; Linzi Wilson-Wilde <[redacted]>; Jac Thong <jac.thong@dnainquiry.qld.gov.au>; Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>
Subject: RE: Revised report - Linzi Wilson-Wilde

Dear Linzi

I just noticed one further thing. In para [2], I believe “composes” should be “comprises”.

Thanks
Susan

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

From: Susan Hedge
Sent: Thursday, 20 October 2022 10:02 AM
To: Wilson-Wilde, Linzi (AGD) <[redacted]>; Linzi Wilson-Wilde <[redacted]>; Jac Thong <jac.thong@dnainquiry.qld.gov.au>; Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>
Subject: RE: Revised report - Linzi Wilson-Wilde

Thank you Linzi. I really appreciate your hard work on this, particularly on tight timeframes.

Please find attached the marked up version with our suggested changes and comments. They are all fairly minor, except for one issue about the validation documents.

If you are content, could you finalise and send back to us?

You can leave your CV as a separate PDF, and we can combine at this end if that suits.

Given the thoroughness of your report, we may not need oral evidence on this topic. We will let you know later today.

Thanks
Susan

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

From: Wilson-Wilde, Linzi (AGD) <[redacted]>
Sent: Thursday, 20 October 2022 1:30 AM
To: Linzi Wilson-Wilde <[redacted]>; Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>; Jac Thong <jac.thong@dnainquiry.qld.gov.au>; Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>
Subject: Revised report - Linzi Wilson-Wilde
Importance: High

UNOFFICIAL

Dear All,
Please find attached the updated draft report. I have attached my CV. Any advice on how I can embed a PDF into a word document would be greatly appreciated!
I may be better off waiting until the report is finalised and combining the two PDFs.
Let me know what changes you would like.
All the best, Linzi

M [redacted]

Linzi Wilson-Wilde

Subject: Fwd: Summary of how and when OQIs relating to DNA IQ raised

Sent from my iPad

Begin forwarded message:

> **From:** Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
> **Date:** 18 October 2022 at 9:57:38 pm AEDT
> **To:** Linzi Wilson-Wilde <[redacted]>
> **Cc:** Jac Thong <jac.thong@dnainquiry.qld.gov.au>, Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>
> **Subject: Summary of how and when OQIs relating to DNA IQ raised**
>
> Dear Linzi
>
> Please find attached table prepared by Eleanor regarding how each of the OQIs were raised.

Eleanor notes “the column “Brief description of how issue raised and whether appears to be real time” is simply my interpretation of the report so care should be taken relying solely on that column.”

I hope that and Jac’s chronology assist.

Thanks
Susan

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

This email is intended only for the addressee. Its use is limited to that intended by the author at the time and it is not to be distributed without the author's consent. Unless otherwise stated, the State of Queensland accepts no liability for the contents of this email except where subsequently confirmed in writing. The opinions expressed in this email are those of the author and do not necessarily represent the views of the State of Queensland. This email is confidential and may be subject to a claim of legal privilege. If you have received this email in error, please notify the author and delete this message immediately
This email is intended only for the addressee. Its use is limited to that intended by the author at the time and it is not to be distributed without the author's consent. Unless otherwise stated, the State of Queensland accepts no liability for the contents of this email except where subsequently confirmed in writing. The opinions expressed in this email are those of the author and do not necessarily represent the views of the State of Queensland. This email is confidential and may be subject to a claim of legal privilege. If you have received this email in error, please notify the author and delete this message immediately
This email is intended only for the addressee. Its use is limited to that intended by the author at the time and it is not to be distributed without the author's consent. Unless otherwise stated, the State of Queensland accepts no liability for the contents of this email except where subsequently confirmed in writing. The opinions expressed in this email are those of the author and do not necessarily represent the views of the State of Queensland. This email is confidential and may be subject to a claim of legal privilege. If you have received this email in error, please notify the author and delete this message immediately

Fletcher, Caitlin [redacted]

From: Linzi Wilson-Wilde <[redacted]>
Sent: Monday, 9 October 2023 2:39 PM
To: Linzi Wilson-Wilde
Subject: Fwd: Promega manuals
Attachments: Promega TB297.pdf; Promega TB296.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Begin forwarded message:

From: Susan Hedge <susan.hedge@dnainquiry.qld.gov.au>
Subject: Promega manuals
Date: 20 October 2022 at 5:53:22 pm AEST
To: Linzi Wilson-Wilde <[redacted]>
Cc: Eleanor Lynch <eleanor.lynch@dnainquiry.qld.gov.au>, Jac Thong <jac.thong@dnainquiry.qld.gov.au>

Dear Linzi

We requested FSS identify the correct manual to us. They provided the attached two manuals and gave the following information:

"Staff within the laboratory have located two hard copy Promega manuals.

These manuals are shown as revised 04/06 and to the best of our knowledge would be the manuals for the period 1 June 2007 to 31 December 2008. Later related manuals located online show a revision date of 2009."

Let us know if you have any difficulties, otherwise I am happy for you to form your views about the validation including whether it was done consistently with best practice and finalise your report to send to us.

If you are going to give evidence tomorrow, it will likely be the afternoon as our witnesses ran over today. Please let me know if you are unavailable at any point in the afternoon.

If you need me tonight, feel free to ring my mobile [redacted].

Thanks
Susan

Susan Hedge
Counsel Assisting
Commission of Inquiry into Forensic DNA Testing in Queensland
Phone: 07 3003 9721 Email: susan.hedge@dnainquiry.qld.gov.au

LWW-13

No.	Document	Date	Inquiry Reference
1.	**Letter to Expert**		
1.1	Letter of instructions to Linzi Wilson-Wilde		
2.	**Terms of Reference**		
2.1	Terms of Reference - Commission of Inquiry into DNA Testing in Queensland	10/06/22	
3.0	**Audits/Reviews**		
3.1	Report – 'Investigation into a partial DNA profile negative extraction control sample' (Cheng, McNevin)	Undated	FSS.0001.0057.3100
3.1a	Report – A review of DNA extraction control results obtained in the first six months of 2008' (Harvey & McNevin)	Undated	FSS.0001.0065.5065
3.1b	Report – A review of DNA extraction control results obtained in the second six months of 2008' (Harvey & McNevin)	Undated	FSS.0001.0060.5790
3.2	Audit 8227 Checklist	Undated	FSS.0001.0060.4876
3.3	Audit Report – 'Audit 8227. Process Audit of the Automated DNA IQ System (including Off-Deck Lysis) (Cheng, Clausen, Muharam)	Aug 2008	FSS.0001.0057.3107
3.4	Presentation – Audit 8227: Process audit of the DNA IQ System	17/09/08	FSS.0001.0060.4883
3.5	Audit Report – Extraction Batch Audit	Sep 2008	FSS.0001.0060.5715
3.5a	Presentation – Extraction Batch Audit	17/09/08	FSS.0001.0060.5730
3.5b	Report (Desley Pitcher) – DNA Extraction Modifications	03/10/08	FSS.0001.0070.3708
3.5c	Report (Desley Pitcher) – DNA Extraction Modifications	06.11.08	FSS.0001.0070.3710
3.6	External Review of Operations Report – Drs Sloots & Whiley	14/11/08	FSS.0001.0024.0805
3.7	Presentation – "Update on DNA Analysis Issues"	15/12/08	FSS.0001.0024.4152
3.8	NATA Report on reassessment (Item 4.9.1)	27/01/09	FSS.0001.0024.3564

3.9	Audit Report – 'Audit 9642: DNA IQ method of extracting DNA from casework and reference samples audit' (Sultana & Brady)	Aug 2009	FSS.0001.0060.5699
3.10	Audit #9642 Response		FSS.0001.0056.7885
4.0	**OQIs/Audit Entries**		
4.1	#18580	10/01/08	FSS.0001.0002.2199
4.2	#19349	23/04/08	FSS.0001.0002.2245
4.3	#19477	12/05/08	FSS.0001.0002.2268
4.4	#19767	14/06/08	FSS.0001.0002.2279
4.5	#19768	14/06/08	FSS.0001.0002.2282
4.6	#20231	24/07/08	FSS.0001.0002.2310
4.6a	#8752 (Audit of all extraction batches)	28/07/08	FSS.0001.0056.7891
4.7	#20351	08/08/08	FSS.0001.0002.2312
4.8	#20367	11/08/08	FSS.0001.0002.2320
4.9	#20368	11/08/08	FSS.0001.0002.2324
4.10	#20369	11/08/08	FSS.0001.0002.2328
4.11	#20422	20/08/08	FSS.0001.0002.2333
4.12	#20432	21/08/08	FSS.0001.0002.2336
4.13	#20437	21/08/08	FSS.0001.0002.2340
4.14	#20615	04/09/08	FSS.0001.0002.2344
4.15	#20617	05/09/08	FSS.0001.0002.2348
4.16	#20690	15/09/08	FSS.0001.0002.2353
4.17	#20925	06/10/08	FSS.0001.0002.2359
4.18	#21050	13/10/08	FSS.0001.0002.2366
4.19	#21222	28/10/08	FSS.0001.0002.2373
4.20	#21309	06/11/08	FSS.0001.0002.2381

4.21	#9175 (DNA IQ External Audit – Sloots & Whiley)	12/11/08	FSS.0001.0056.7799
4.22	#21589	05/12/08	FSS.0001.0002.2407
4.23	#21718	15/12/08	FSS.0001.0002.2418
4.24	#22438	12/03/09	FSS.0001.0002.2448
4.25	#9642 (DNA IQ Follow up audit)	24/08/09	FSS.0001.0060.5799
5.0	**Correspondence**		
5.1	Meeting Minutes (Biology Team) (see p. 6, 3.8)	10/04/08	FSS.0001.0003.2453
5.2	Meeting Minutes (see 2.1 and 2.2)	02/06/08	FSS.0001.0003.5587
5.3	Meeting Minutes	23/06/08	FSS.0001.0003.5593
5.4	Meeting Minutes	30/06/08	FSS.0001.0003.5597
5.5	Meeting Minutes	11/07/08	FSS.0001.0003.5571
5.6	Memorandum – Vanessa Ientile – DNA IQ Extractions	14/07/08	FSS.0001.0024.0802
5.7	Meeting Minutes	21/07/08	FSS.0001.0003.5581
5.8	Meeting Minutes	04/08/08	FSS.0001.0003.5560
5.8a	Management Team Meeting Minutes	05/08/08	FSS.0001.0079.5294
5.9	Meeting Minutes (Analytical Team) (see p. 3, 3.5)	11/08/08	FSS.0001.0002.6861
5.10	Meeting Minutes	12/08/08	FSS.0001.0003.5548
5.10a	Meeting Minutes (Analytical Team) (see p. 2, 3.5)	18/08/08	FSS.0001.0002.6912
5.11	Meeting Minutes	21/08/08	FSS.0001.0003.5554
5.12	Meeting Minutes	08/09/08	FSS.0001.0003.5615
5.13	Meeting Minutes	15/09/08	FSS.0001.0003.5622
5.13a	Meeting Minutes	15/09/08	FSS.0001.0002.6896
5.14	Meeting Minutes	30/09/08	FSS.0001.0003.5629
5.14a	Meeting Minutes (Forensic Reporting and Intelligence Team Meeting)	02/10/08	FSS.0001.0070.3907

5.15	Meeting Minutes	07/10/08	FSS.0001.0003.5605
5.16	Meeting Minutes	20/10/08	FSS.0001.0003.5610
5.16a	Presentation – MP11 Enhancements	13/11/08	FSS.0001.0070.3925
5.17	Meeting Minutes	09/03/09	FSS.0001.0002.7217
5.18	Meeting Minutes	26/03/09	FSS.0001.0003.2867
5.19	Correspondence from Cathie Allen to Department of Justice and Attorney-General	May 2009	DPP.0052.0009.0004
6.0	**Spreadsheets**		
6.1	Issues Log – 2007 – 2009		FSS.0001.0010.8973
6.2	List of OQI's – 2003 – 2022		FSS.0001.0002.1723
6.3	Audit 8227 OQIs		FSS.0001.0060.5049
6.4	Analytical Issues Log		FSS.0001.0010.8992
6.5	Minor Changes Log		FSS.0001.0002.3879
7.0	**Miscellaneous**		
7.1	Technical Manual – DNA IQ Casework Pro Kit for Maxwell 16	2010	FSS.0001.0010.6421
7.2	Correspondence from David Neville to Michael Keller re: potential contamination	26/02/09	QPS.0001.1117.0001
8.0	**SOPs**		
8.1	SOP – DNA IQ Method of Extracting DNA from casework and reference samples		FSS.0001.0070.4340
9.0	**Supplementary Material**		
9.1	Additional OQIs: • OQI #18893 – FSS.0001.0002.2210 • OQI #19213 – FSS.0001.0002.2240 • OQI #19330 – FSS.0001.0002.2242 • OQI #21062 – FSS.0001.0002.2368 • OQI #21715 – FSS.0001.0002.2416 • OQI #22882 – FSS.0001.0002.2507		

9.2	Additional correspondence: • Management Team Minutes (Extraordinary meeting – 140708) – FSS.0001.0080.2579 • Email from Vanessa Ientile (28 July 2008) – FSS.0001.0080.2646 • Management Team Minutes (Extraordinary meeting – 28 July 2008) – FSS.0001.0080.2657 • Audit 8827 Meeting Notes – FSS.0001.0080.2861		
9.3	Additional Investigation Reports: • Investigation into contamination of negative and positive extraction control re: OQI 19349 • Investigation into mixture found in FTA evidence sample re: OQI 19767 • Investigation into negative control with peaks re: OQI 19768 • Investigation into negative extraction control with a partial DNA profile re: OQI 20231 • Investigation into positive control with extra peaks		FSS.0001.0080.2541 FSS.0001.0080.2591 FSS.0001.0080.2651 FSS.0001.0080.2750 FSS.0001.0080.3123
9.4	Extra Batch Contamination Notes: • Extraction Batch Contamination – OQI #20422 • Extraction Batch Contamination – OQI #20437 • Extraction Batch Contamination – OQI #20615 • Extraction Batch Contamination – OQI #20690 • Extraction Batch Contamination – OQI #20925 • Extraction Batch Contamination – OQI #21050 • Extraction Batch Contamination – OQI #21222 • Extraction Batch Contamination – OQI #21309		FSS.0001.0080.2773 FSS.0001.0080.2780 FSS.0001.0080.2790 FSS.0001.0080.2815 FSS.0001.0080.2824 FSS.0001.0080.2833 FSS.0001.0080.2836 FSS.0001.0080.2843
9.5	SOPs – Environmental Monitoring and Anti-Contamination Procedure		
9.6	SOPs – DNA IQ Extraction with the DNA IQ Kit Training Module (all versions):		

	1. #24896v1 (31.10.07) – FSS.0001.0080.6495 2. #24896v2 (05.08.08) – FSS.0001.0080.6502 3. #24896v3 (14.08.09) – FSS.0001.0080.6511 4. #24896v4 (16.05.11) – FSS.0001.0080.6521 5. #24896v5 (10.12.12) – FSS.0001.0080.6532 6. #24896v6 (30.03.15) – FSS.0001.0080.6541 7. #24896v7 (07.11.16) – FSS.0001.0080.6551		
9.7	SOPs – Automated DNA IQ Method of Extracting DNA: 1. #24897v1 (24.10.07) – FSS.0001.0080.6560 2. #24897v2 (11.01.08) – FSS.0001.0080.6622 3. #24897v3 (27.03.08) – FSS.0001.0080.6644 4. #24897v4 (21.05.08) – FSS.0001.0080.6677 5. #24897v5 – FSS.0001.0080.6710 6. #24897v6 (13.08.09) – FSS.0001.0080.6734 7. #24897v7 (09.11.10) – FSS.0001.0080.6759 8. #24897v8 (27.06.12) – FSS.0001.0080.6789 9. #24897v9 (03.01.14) – FSS.0001.0080.6816 10. #24897v10 (12.06.15) – FSS.0001.0080.6574 11. #24897v11 (30.01.17) – FSS.0001.0080.6604		
9.8	MPII Maintenance Logs and Cleaning Diaries: • MPII ExtA Calibration 2007 • MPII ExtA Diary 2007 Reference • MPII ExtA Diary 2008 • MPII ExtA Diary 2009 (Jan-May) • MPII ExtA Maintenance Log 2007 • MPII ExtA Maintenance Log 2008 • MPII ExtA Maintenance Log 2009 • MPII ExtB Calibration 2007 • MPII ExtB Diary 2007 (Oct-Dec) • MPII ExtB Diary 2008 • MPII ExtB Diary 2009 (Jan-May) • MPII ExtB Maintenance Log 2007 • MPII ExtB Maintenance Log 2008 • MPII ExtB Maintenance Log 2009		
9.9	Statement of Catherine Allen, only references: • Statement (paragraphs [168] – [198]; and • Exhibits CA-87 (start p 3050) – CA-121 (end p 3322)		WIT.0019.0016.0001

9.10	Statement of Justin Howes, only references: • Statement (paragraphs [89] – [136]); and • Exhibits JH-41 (start p 398) – JH-58 (ending p 606)		WIT.0016.0188.0001
9.11	Records of environmental monitoring: • FBE Jan-May 2009 • Spreadsheet FBE 07-08 • FBE0107 and FBE0207 Data		
9.12	Statement of Allan McNevin, only references: • Statement (paragraphs [262] – [317]); and • Exhibits ARM 104 (start 1410) – ARM 119 (end p 1840).		WIT.0040.0077.0001
9.13	Statement of Thomas Nurthern		WIT.0050.002.0001 WIT.0050.0003.0001
10.0	**Further Supplementary Material re validations**		
10.1	Response to the COI request for written information re validation of DNA IQ methods	18.10.2022	
10.2	QIS 24897 V1		FSS.0001.0080.6560
10.3	Project 9. Report on the Evaluation of Commercial DNA Extraction Chemistries		
10.4	Project 13. Report on the Verification of an Automated DNA IQ™ Protocol using the MultiPROBE® II PLUS HT EX with Gripper™ Integration Platform		
10.5	QIS 24897 V3		FSS.0001.0080.6644
10.6	Project 11. Report on the Validation of a manual method for Extracting DNA using the DNA IQ™ System (PDF version)		
10.7	Project 21. A Modified DNA IQ™ Method Consisting of Off-Deck Lysis to Allow Supernatant Retention for Presumptive Identification of α-Amylase (scanned version)		

10.8	Project 22. A Modified DNA IQ™ Method for Off-Deck Lysis Prior to Performing Automated DNA Extraction (scanned and draft versions)		
10.9	Emails (x4) re off deck lysis reports		
10.10	Project 13 verification of extraction chemistry (word doc)		