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Extraction Batch Audit

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DNA Analysis FSS (September 2008)

1. Abstract

An internal audit of the extraction process was deemed necessary to address adverse quality events identified through the laboratory quality system and Opportunity for Quality Improvement (OQI) process. The purpose of this audit was to maintain the continuous high quality standards within the DNA Analysis laboratory.

All initial results obtained from casework samples processed with DNA IQ™ and the MultiPROBE® II PLUS HT EX platforms between the 23 October 2007 and the 28 July 2008 were investigated, this included a total of 216 extraction batches. Of these, 202 batches w[redacted]%), six bato[redacted]d on hold pending the release of results (3%) ar[redacted]he involvement in previous OQI's (2%). An a[redacted]ough the identification of new contamination e[redacted]

T[redacted]s scientists with a new tool to reinforce the e[redacted]strengthening the confidence scientists have in repo[redacted]ve applications outside the scope of this audit and be[redacted]

2. A[redacted]

- [redacted]te casework [redacted]from extractions processed with [redacted]on [redacted]PROBE® II Pl[redacted]forms for [redacted]on events by comparing [redacted]ch [redacted]thin an extraction batch.

3. Ba[redacted]d

Through the laboratory quality system (OQI process) a number of adverse quality events were identified on the MultiPROBE® II platforms. Five OQI's (18580, 19349, 19477, 19768 and 20231) had previously been raised to address a dropped Slicprep™ 96 Device plate and profiles in the negative controls. The management team convened and a decision was made to conduct an internal audit of th[redacted]process.

Initial investigations were unable to de[redacted]ther the contamination events originally identified were due to the MultiPROB[redacted]s alone or a combination of the platforms and the DNA IQ™ process. The ma[redacted]am subsequently decided to audit the initial results obtained from every casework sample processed through DNA IQ™ and on the MultiPROBE® II PLUS platforms. This covered the period from the 23 October 2007 to the 28 July 2008, when both processes were temporarily halted. A working party was later established to manage the reporting of all results, with a focus on the release of urgent statements.

[redacted]

Queensland Government
Queensland Health

Laboratory Information Systems and Solutions (LISS) in association with Thomas Nurthern (DNA Analysis, Forensic Scientific Services (FSS)) created an export file from AUSLAB. This function exported the initial results obtained from an extraction batch to a text file that could then be imported into Microsoft Excel. Timothy Gardam (DNA Analysis, FSS) developed a results comparison macro that identified any matches of >12 alleles between samples from within an extraction batch. This matching stringency was determined by the management team in alignment with the upload stringency of the National Criminal Investigation DNA Database (NCIDD).

4. Equipment and Materials

i. AUSLAB function to export the initial results from an extraction batch
ii. AUSLAB function to export the details of samples from an extraction batch (eg
ase number,
y)

5. Methods

5.1. Extraction Audit Progress

i. The status of each extraction batch was recorded in an Excel spreadsheet titled Batch Audit Progress, located in I:/Extraction Audit (See Figure. 1 – Batch Audit Progress).

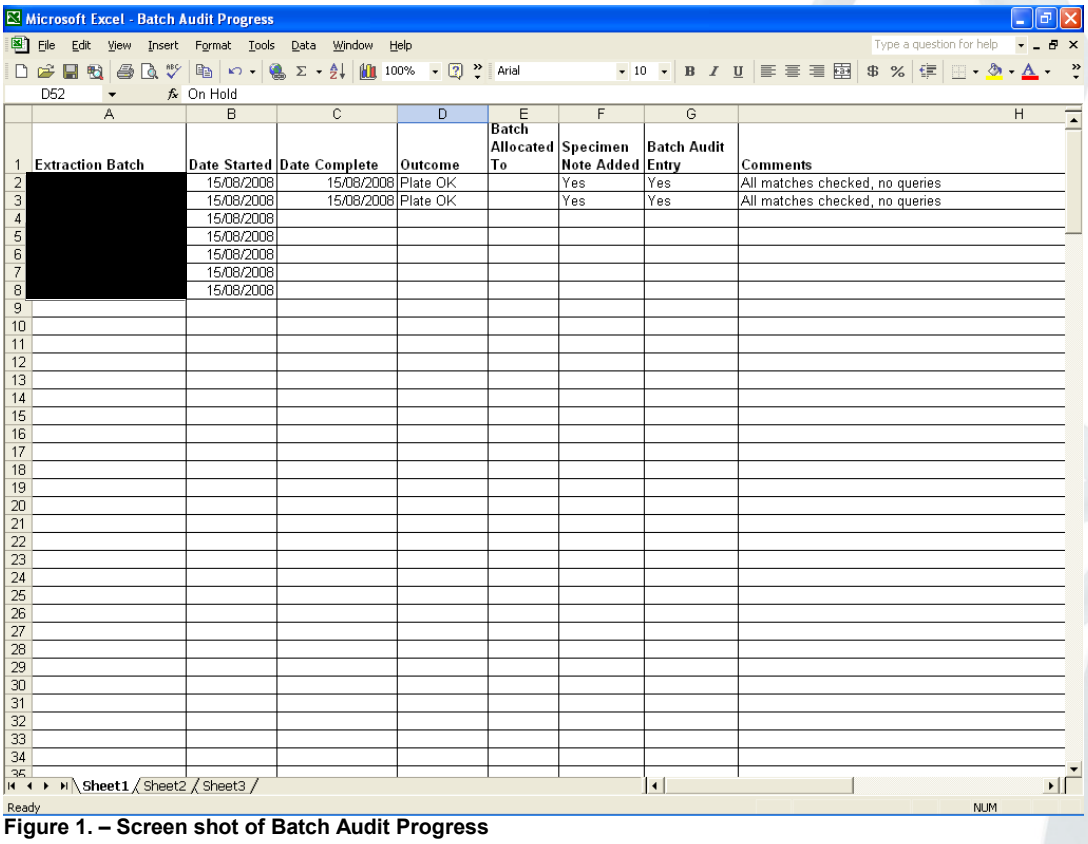

Figure 1. – Screen shot of Batch Audit Progress

[redacted]

5.2. Virtual Platemap of Extraction Batch

i. AUSLAB was opened.
ii. Options 5. (Workflow Management) and 2. (DNA Batch Details) were selected.
iii. The Extraction Batch number was entered (eg. CWIQEXT20071023_02). The DNA Extraction Batch Details were displayed (See Figure 2. – AUSLAB DNA Extraction Batch Details).

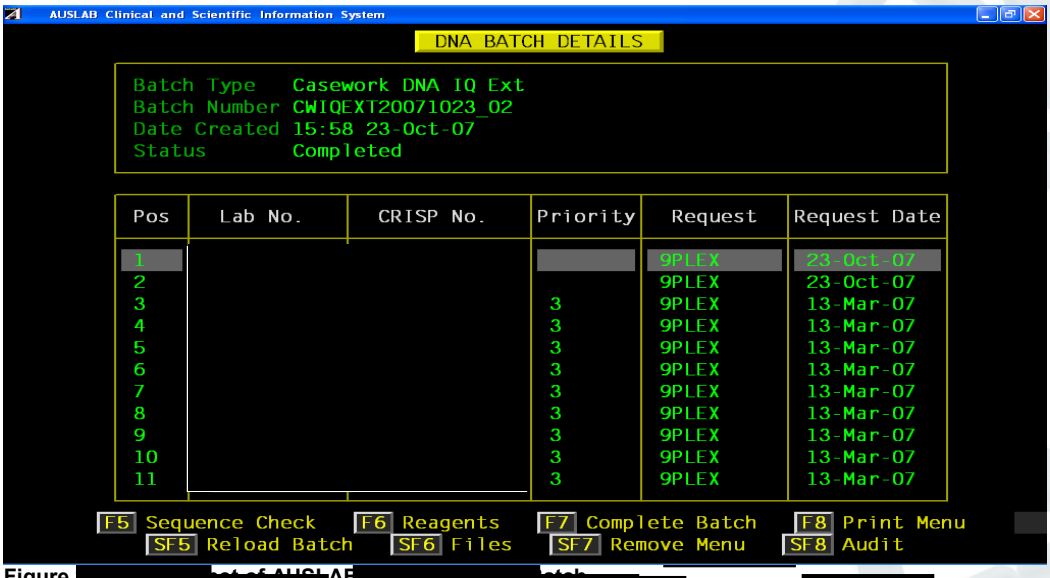

Figure [redacted]

iv. [redacted]atch (Shift F[redacted] to export the extraction batch results from [redacted] These resu[redacted]as a text file to C:/AUSLAB, which was then [redacted]e the I:/Extr[redacted]rk in Progress/AUSLAB Shift F5 folder.
v. [redacted] function (Ct[redacted]cted to export all of the extraction batch [redacted]m AUSLAB[redacted]K to save table to disk (y/n)?" was displayed, [redacted]elected for y[redacted]ame I:/Extraction Audit/Work in [redacted]CWIQEXT2[redacted] was entered.
vi. The extract[redacted]preadsheet was opened, a header row was inserted titled Position, Lab no, Case no, Priority, Test Code, Date, Extracton Batch, Sample ID, Sex, D3, D8, D5, vWA, D21, D13, FGA, D7 and D18.
vii. The extraction batch number was entered for all samples.
viii. A new worksheet titled "Comparison" was inserted into the extraction batch details spreadsheet.

[redacted]

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ix. The extraction batch results text file (located in the Shift F5 folder) was opened with Microsoft Excel, all of the results were copied and then pasted into the extraction batch details spreadsheet. This entire spreadsheet was the virtual plate map of the extraction batch (See Figure 3. – Virtual plate map).

x. If result fields were blank in the virtual plate map, it was necessary to check the status of samples in AUSLAB. Reasons for no results included samples still being processed, pooling, immediate reworking, cease work or samples had not automatically progressed to quantification. Any explanations for blank result fields were noted in the virtual plate map. For samples that had failed to progress to quantification, a re-quant had to be ordered in AUSLAB. The test code for this was REQC.

Microsoft Excel - CWIQEXT20071023_02

1	Position	Lab no	Case no	Priority	Test code	Date	Extraction batch	SAMPLE ID	SEX	D3	D8	D5	vWA	D21	D13	FGA	D7	D18
2	1	[redacted]	[redacted]		9PLEX	23-Oct-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
3	2	[redacted]	[redacted]		9PLEX	23-Oct-07	[redacted]	[redacted]		17,18	11,13	11,11	14,17	30,32.2	8,12	24,25	10,11	13,14
4	3	[redacted]	[redacted]	3	9PLEX	13-Mar-07	[redacted]	[redacted]		15,17	11,13	10,12,13	16,17,18,19	NR,NR,32.2,38.2	8,9,NR,13	21,22	NR,10,11	14,16
5	4	[redacted]	[redacted]	3	9PLEX	13-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
6	5	[redacted]	[redacted]	3	9PLEX	13-Mar-07	[redacted]	[redacted]		15,16	12,13	11,12	17,NR	NR,NR	NSD	NR,NR	NSD	NR,NR
7	6	[redacted]	[redacted]	3	9PLEX	13-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
8	7	[redacted]	[redacted]	3	9PLEX	13-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
9	8	[redacted]	[redacted]	3	9PLEX	13-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
10	9	[redacted]	[redacted]	3	9PLEX	13-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
11	10	[redacted]	[redacted]	3	9PLEX	13-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
12	11	[redacted]	[redacted]	3	9PLEX	13-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
13	12	[redacted]	[redacted]	3	9PLEX	13-Mar-07	[redacted]	[redacted]		15,17	12,13	11,13	15,16	28,33.2	11,13	21,26	NR,NR	16,18
14	13	[redacted]	[redacted]	3	9PLEX	13-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
15	14	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		16,18	10,14	11,11	NR,NR	NR,NR	NR,NR	NR,26	NR,NR	NR,NR
16	15	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		Sample pooled.								
17	16	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
18	17	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
19	18	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		16,18	12,14	11,11	16,16	29,29	11,14	23,26	10,14	12,13
20	19	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		16,17	12,13	12,12	15,18	27,32.2	8,11	20,23	NR,NR	15,15
21	20	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		Cease work requested.								
22	21	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		14,16	13,14	11,12	15,16	29,30.2	12,14	22,23	8,10	16,16
23	22	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		NR,NR	NR,NR	NR,NR	NSD	NSD	NR,NR	NR,NR	NSD	NSD
24	23	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
25	24	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
26	25	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
27	26	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		15,16	13,15	12,13	14,18	31,32.2	11,13	24,25	8,12	12,13
28	27	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		15,16	10,12	11,12	17,18	29,30	12,12	21,24	NR,NR	15,NR
29	28	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
30	29	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		15,NR	NR,NR,NR	11,NR	NR,NR	NR,NR	NR,NR	NR,NR,NR	NR,NR	NSD
31	30	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		15,16	10,12	11,12	17,18	29,30	12,12	21,NR,24	NR,11	15,16
32	31	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
33	32	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
34	33	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
35	34	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		15,16	10,12	11,12	NR,18	NR,NR	NR,NR	NR,NR	NSD	NR,NR
36	35	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
37	36	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
38	37	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		15,16	10,12	11,12	17,18	29,30	12,12	21,24	10,11	15,16
39	38	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		15,16,17,18	12,NR,14,NR	NR,11,NR,13	14,NR,16	28,NR,31.2	8,NR,12	NR,25	NR,NR	14,14
40	39	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		17,NR	NR,NR	11,11	16,NR	NR,NR	NSD	NR,NR	NSD	NSD
41	40	[redacted]	[redacted]	3	9PLEX	14-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
42	41	[redacted]	[redacted]	3	9PLEX	15-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
43	42	[redacted]	[redacted]	3	9PLEX	15-Mar-07	[redacted]	[redacted]		17,NR	NR,NR	NR,NR	NR,NR	NSD	NSD	NR,NR	NSD	NSD
44	43	[redacted]	[redacted]	3	9PLEX	15-Mar-07	[redacted]	[redacted]		15,NR	NR,NR	NR,NR	NSD	NSD	NSD	NSD	NSD	NSD
45	44	[redacted]	[redacted]	3	9PLEX	15-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
46	45	[redacted]	[redacted]	3	9PLEX	15-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
47	46	[redacted]	[redacted]	3	9PLEX	16-Mar-07	[redacted]	[redacted]		15,19	12,13	12,13	16,16	28,31.2	11,12	23,23	NR,NR	NR,19
48	47	[redacted]	[redacted]	3	9PLEX	16-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
49	48	[redacted]	[redacted]	3	9PLEX	16-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD
50	49	[redacted]	[redacted]	3	9PLEX	16-Mar-07	[redacted]	[redacted]		15,18	13,15	12,12	15,18	29,29	11,11	23,24	10,10	10,15
51	50	[redacted]	[redacted]	3	9PLEX	16-Mar-07	[redacted]	[redacted]		16,17	14,15	11,13	NR,NR	NSD	NSD	NR,NR	NSD	NSD
52	51	[redacted]	[redacted]	3	9PLEX	16-Mar-07	[redacted]	[redacted]		NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD	NSD

CWIQEXT20071023_02 / Comparison

Figure 3. – Screen shot of virtual plate map

[redacted] [redacted]

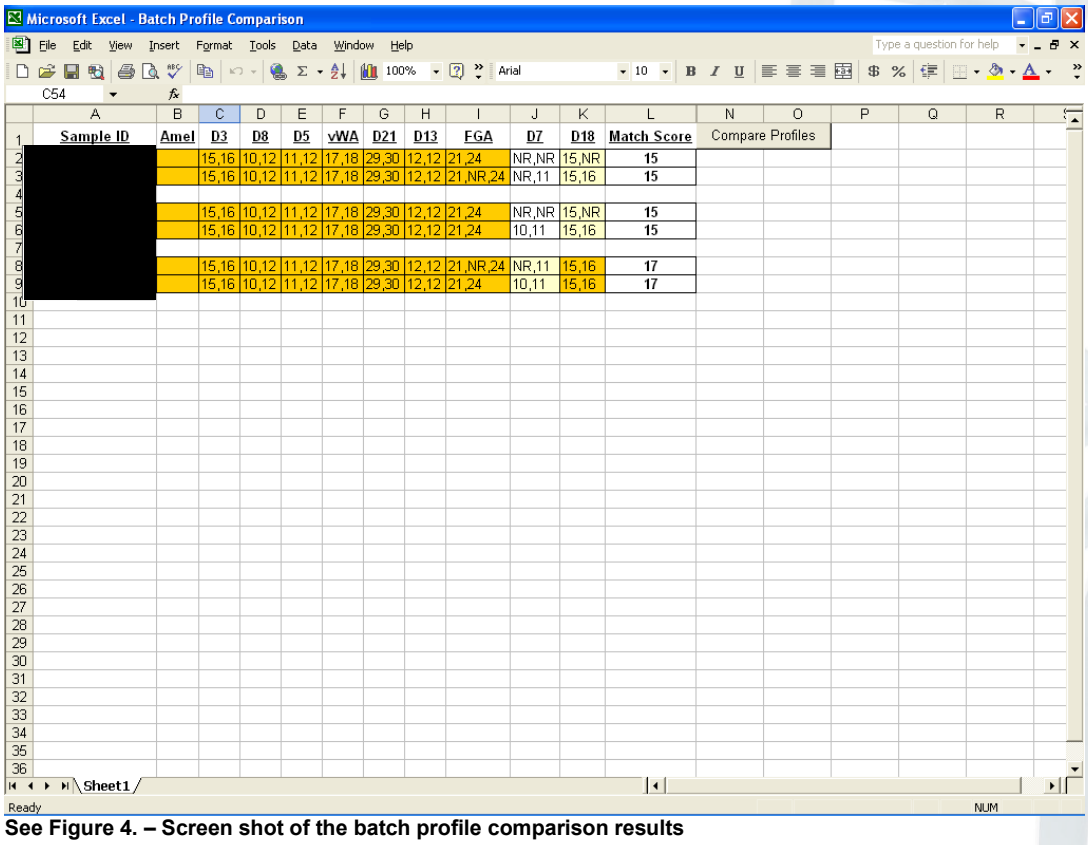
[redacted]

[redacted]

[redacted]

5.3. Extraction Batch Comparison

i. The Batch Comparison Macro in I:/Macros/testing was opened.
ii. Compare Profiles was selected.
iii. A prompt window “Choose a file for match comparison” was displayed. The extraction batch results text file to be compared (located in the Shift F5 folder) was selected. This generated the batch profile comparison results (See Figure 4. – Batch profile comparison results).
iv. This page was copied and pasted into the comparison worksheet of the virtual plate map, and then printed to include the extraction batch number as a hard copy record.



Sample ID	Amel	D3	D8	D5	vWA	D21	D13	FGA	D7	D18	Match Score
[redacted]		15,16	10,12	11,12	17,18	29,30	12,12	21,24	NR,NR	15,NR	15
		15,16	10,12	11,12	17,18	29,30	12,12	21,NR,24	NR,11	15,16	15
		15,16	10,12	11,12	17,18	29,30	12,12	21,24	NR,NR	15,NR	15
		15,16	10,12	11,12	17,18	29,30	12,12	21,24	10,11	15,16	15
		15,16	10,12	11,12	17,18	29,30	12,12	21,NR,24	NR,11	15,16	17
		15,16	10,12	11,12	17,18	29,30	12,12	21,24	10,11	15,16	17

See Figure 4. – Screen shot of the batch profile comparison results

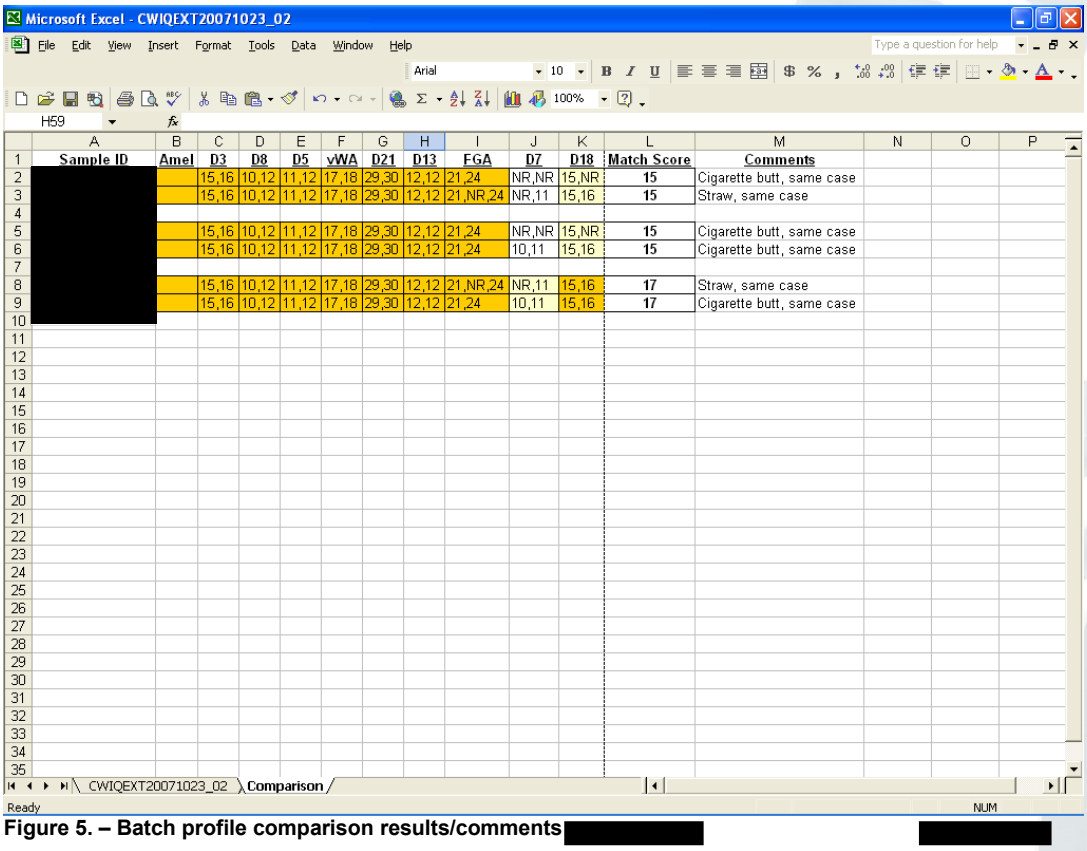
The batch comparison macro identified any matches of >12 alleles between samples from within an extraction batch. Matching a[redacted]ted in yellow. Light yellow indicated one matching allele, and da[redacted]dicated at least two matching alleles. The number of matching alleles between s[redacted] listed in the column titled Match Score.

[redacted]

[redacted]

5.4. Checking Matches

i. AUSLAB was opened.
ii. Options 5. (Workflow Management) and 2. (DNA Batch Details) were selected.
iii. The Extraction Batch number was entered (eg. CWIQEXT20071023_02).
iv. The first matching sample highlighted by the Macro was selected. Sample details were noted (eg. exhibit type). This was repeated for the second matching sample. If both samples were from the same exhibit and/or case this match was passed. Comments for each match were entered into the comparison worksheet within the virtual plate map (See Figure 5. – Batch profile comparison results/comments).



	Sample ID	Amel	D3	D8	D5	vWA	D21	D13	FGA	D7	D18	Match Score	Comments
2	[redacted]		15,16	10,12	11,12	17,18	29,30	12,12	21,24	NR,NR	15,NR	15	Cigarette butt, same case
3			15,16	10,12	11,12	17,18	29,30	12,12	21,NR,24	NR,11	15,16	15	Straw, same case
4													
5			15,16	10,12	11,12	17,18	29,30	12,12	21,24	NR,NR	15,NR	15	Cigarette butt, same case
6			15,16	10,12	11,12	17,18	29,30	12,12	21,24	10,11	15,16	15	Cigarette butt, same case
7													
8			15,16	10,12	11,12	17,18	29,30	12,12	21,NR,24	NR,11	15,16	17	Straw, same case
9			15,16	10,12	11,12	17,18	29,30	12,12	21,24	10,11	15,16	17	Cigarette butt, same case

Figure 5. – Batch profile comparison results/comments [redacted]

v. If the extraction batch was released at this stage, Audit (Shift F8) and Insert Audit Trail (F5) was selected from the extraction batch and "Extraction batch audit complete. Plate released" was entered. A sp[redacted] also entered for each sample on the extraction batch.
vi. Any matches that could not be pas[redacted]ighlighted in red and the entire batch was placed on hold pending further in[redacted]
vii. The Batch Audit Progress spread[redacted]updated with all outcomes.
viii. Both the Batch Audit Progress spreadsheet and all finalised virtual plate maps were password protected to ensure the integrity of these documents.

[redacted]

5.5 Further Investigation

i. For matches requiring further investigation, Genotyper printouts were obtained and case details were noted eg. address, date and type of alleged offence.
ii. Nominated case scientists performed both mixture and single source interpretations.
iii. If matches were excluded, the paperwork was returned for filing, and both AUSLAB and the Batch Audit Progress spreadsheet were updated.
iv. If possible, re-sampling was conducted to confirm matches between single source profiles from different cases. Where re-sampling was not possible, the original spin baskets were re-extracted.

5.6 Contamination Events

Mixed [redacted] ource match[redacted] ntified as contamination events were brought to [redacted] t was made to establish the source of the c[redacted] plate map. An OQI was then raised by a s[redacted]

[redacted]

6. Results

It was identified that there were 278 extraction batches processed through DNA IQ™ and on the MultiPROBE® II platforms from the 23 October 2007 to the 28 July 2008 (See Table 1. - Current status of audited extraction batches). These extraction batches were filed in six extraction folders (Volumes 28-33) located in the Analytical Section.

Table 1. – Current status of audited extraction batches

Total number of extraction batches	**278**
Extraction batches released	202
Extraction batches on hold	14
Extraction batches removed	62

Extraction batches were released:

matches we r the use of the Batch Comparison Macro, or ed by samples originating from the same e case.

M l partial and full profiles from both single and m ntists performed interpretations to determine if th ther investigation was required before the batch

Extrac s were plac ey were part of previously raised OQI's (five), new C as a result ree), or if re-sampling was required to confirm initial r e).

- OQI's includ 9768 and 20251. These reports ccessed thro
- new OQI's nd 20437 identified three previously unknown ation events nt extraction batches. These batches are on ing further i r further details please refer to 1. - OQI 20 . - OQI 20422 and Appendix 3. - OQI 20437.
- between dif re identified on nine extraction batches. Re- or re-extrac ginal spin baskets has been conducted and results are batches.

There were five extraction batches where 53 samples had not progressed to Quantification. To finalise initial results a new test code entry was required in AUSLAB.

Extraction batches were removed in AUSLAB for several reasons. These included:

- controls not being added
- incorrect sample type (tapelifts or manual extraction)
- incorrect batch type (off-deck)
- requiring smaller batch sizes (urgent samples)

7. Discussion

From the 278 extraction batches included in this audit, a total of 202 batches were released. Of these:

- 22 batches returned no matches after the use of the Batch Comparison Macro.
- 157 batches returned matches that could be explained without further investigation.
- 20 batches were initially identified as requiring further interpretation by a nominated case scientist, but were subsequently passed as there was no evidence of contamination.
- 3 batches were re-sampled and passed as the profiles obtained from re-sampling matched the original profiles.

A total of 14 extraction batches were placed on hold. These included:

- Five batches involved in previous OQI's
  [redacted] our of these [redacted] 19477, 19768 and 20231) were from [redacted] nation events. The initial results were reported [redacted] d from a dropped Slicprep™ plate. [redacted] d. [redacted] that identified previously unknown [redacted] n batch CWIQEXT20080402_01. This batch [redacted] le present in the positive extraction control - [redacted] profile matched to the corresponding [redacted] ofiles obtained from [redacted] ual [redacted] ssault case - [redacted] sition 25), [redacted] (position 26), [redacted] ition 28), [redacted] (position [redacted] 1) and [redacted] 32). This profile also matched to the profiles [redacted] btained from [redacted] r different volume crime cases - [redacted] [redacted] osition 42), [redacted] sition 43), [redacted] (position 44) and [redacted] e contaminating profiles appeared to be [redacted] istributed in [redacted] across the plate.
  [redacted] QI 20422 in [redacted] n batch CWIQEXT20080506_02. This batch [redacted] ad a mixed [redacted] sent in sample - [redacted] (position 7). The [redacted] major compo [redacted] profile matched to the profile obtained from the deceased in this case. The minor component of this profile matched to the profile obtained from the complainant in what appears to be an unrelated sexual assault case - [redacted] (position 23) and [redacted] (position 24).
  - OQI 20437 involved extraction batch CWIQEXT20080630_01. This batch had a bent pipette tip at position 6 which appeared to have made contact with the horizontally adjacent well at position 14. No DNA profile was obtained for sample - [redacted] (position 6), whilst a partial profile was obtained for sample - [redacted] (position 14). In addition, a full profile obtained for sample [redacted] (position 5) from a sexual assault case matched to sample - [redacted] (position 7) a case involving the unlawful use of a motor vehicle.

  These adverse events did not appear to have a uniform distribution across the plate.

[redacted]

- Six batches involved matches that required the re-sampling of exhibits to confirm the initial profiles and exclude any potential contamination events. If re-sampling was not possible, other items from within the case not previously examined were sampled or the original spin baskets were re-extracted. Results are pending.

A total of five extraction batches contained 53 samples that had not progressed to quantification, and therefore the initial results were still outstanding. A new test code entry was required in AUSLAB for these samples to progress. This was either due to the processing comments not being checked by the MultiPROBE® II platform operator or a previously identified system fault in AUSLAB.

8. Miscellaneous

An outcome of the working party was to recommend the use of the filter function in the virtual [redacted] in conjunction [redacted] uality processes to manage the reporting of all re[redacted]

9 [redacted]

Evalua[redacted] extractions using DNA IQ™ and the MultiP[redacted] tion batches. 202 batches were released, 14 batche[redacted] ced on hold [redacted] awaiting results) and [redacted] remov[redacted]

This a[redacted] ed three new [redacted] events and three OQI's were raised to addres[redacted] ues in accor[redacted] aboratory quality system. The new metho[redacted] eloped and a[redacted] udit provides scientists with a strengthened quality [redacted] t may preve[redacted] se events from occurring in future and simult[redacted] crease the c[redacted] tists have in reporting results.

10. Recommendations

Possible recommendations from this audit are li[redacted]

- The Batch Comparison Macro could be applied to all new extraction batches to assist in the identification of an[redacted] prior to the release of results.
- If an adverse event is identified, a streamlined process needs to be in place to address the issue effectively [redacted] laboratory communication (eg. e-mail alert system).
- Availability of AUSLAB functions to export all results from any batch type, facilitating other types of audits and quality measures.
- A previously identified system fault in AUSLAB needs to be addressed to ensure that all samples progress from extraction to quantification.

[redacted]

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APPENDIX 1. – OQI 20351

OQI No.:	**20351**
What Stage?:	**INVESTIGATION OF ROOT CAUSE**
Created By:	RIKA, Kylie
On:	08-AUG-2008
Corporate Unit*:	Forensic and Scientific Services
Site/Location*:	Coopers Plains
Centre/Group:	Forensic Sciences (FS)
Department*:	Forensic Biology (FSS)
Work Area:	Forensic Biology - Major Crime
Descript	CWIQ 2_01 was found to have a partial minor DNA extraction positive control (346792908). This rofile matches alleles present in samples 25), 209039610 (26), 209039596 (27), 209039585), 209039579 (32). These samples are from a nd the profile from these samples is the same. This profiles from four separate volume crime cases tion batch. It appears as though the contaminating profile y contaminated fro ross the plate but als right. Part estigation into this event has r n Audit T a word document w being drafted and sent to the receiver of this OQI so that ded in the investigation part of the OQI process.
Source o	it
What Ne g?:	Proces
Action B :	MCNE
In Corporate Unit:	ific Services
In Site/Location:	Coopers Plains
In Centre/Group:	DNA Analysis
In Department:	Forensic Biology (FSS)
In Work Area:	Forensic Biolo
Root Cause:	Other
Date Actioned or Due:	18-AUG-2008
How Fixed?:	Other
Accepted?:	Pending
Approval Type:	Pending

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APPENDIX 2. – OQI 20422

OQI No.: **20422**
What Stage?: **INVESTIGATION OF ROOT CAUSE**
Created By: HOWES, Justin
On: 20-AUG-2008
Corporate Unit*: Forensic and Scientific Services
Site/Location*: Coopers Plains
Centre/Group: Forensic Sciences (FS)
Department*: Forensic Biology (FSS)
Work Forensic [redacted] or Crime
D [redacted] NA profile was obtained for lab no. [redacted] 382) that had a major DNA profile [redacted] n the matter, and a minor DNA profile [redacted] e obtained from a complainant in an [redacted] xual assault matter (QP800088413).
Sour [redacted] PSS)
What Process
Fixin [redacted]
Actio MGNEV [redacted]
Who [redacted]
In Co Forensic [redacted] Services
Unit: [redacted]
In Coopers [redacted]
Site/L [redacted]
In Forensic [redacted]
Centre/Group: [redacted]
In Department: Forensic Biology (FSS)
Root Cause: Other
Date Actioned or Due: 30-AUG-2008
How Fixed?: Other
Accepted?: Pending
Approval Type: Pending

[redacted]

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Queensland Health

APPENDIX 3. – OQI 20437

OQI No.: **20437**
What Stage?: **INVESTIGATION OF ROOT CAUSE**
Created By: STORER, Amanda
On: 21-AUG-2008
Corporate Unit*: Forensic and Scientific Services
Site/Location*: Coopers Plains
Centre/Group: Forensic Sciences (FS)
Department*: Forensic Biology (FSS)
Work Forensic [redacted] Major Crime
D [redacted] 1 : Whilst this process was running on the [redacted] that the plate was misaligned on the [redacted] p arm contacting the lysate plate. The [redacted] disposable conductive tip at position 6 was [redacted] ve made contact with the well of position [redacted]

Position 6 [redacted] in a DNA profile. [redacted] UUMV, [redacted] Position 1[redacted] in an incomplete [redacted] burglary, [redacted] le)

During fu[redacted] f this extraction batch, it was discovered that the D[redacted] position 5 matched the DNA profile in position 7[redacted]

Position 5 [redacted] ract from the oral swab of a SAIK [redacted] ville), and this DNA profile matches to the DNA profiles obtained from the other intimate samples from the SAIK of that case, so it ap[redacted] a true result. P[redacted] however, was supposed to contain extract from a swab from the right throttle of a motorbike involved in the UUMV case mentioned above [redacted] The other sample for this case was in position 6 [redacted] not result in a profile, and no reference samples [redacted] ived in relation to this matter for further comparis[redacted]

Summary : position 5 ([redacted]) from a sexual assault case has matched to position 7 [redacted]) from an

	apparently unrelated unlawful use of motor vehicle case in another part of the State.
Source of OQI:	Internal Problems (QHPSS)
What Needs Fixing?:	Process
Action By Whom?:	MCNEVIN, Allan
In Corporate Unit:	Forensic and Scientific Services
In Site/Location:	Coopers Plains
In	DNA Analysis
C	[redacted]
I	[redacted]
R	[redacted]
D	[redacted]
o	[redacted]
How	[redacted]
Accep	[redacted]
Appr	**:** Pending