

Report for QIS OQI as of 28/06/2022 11:04:51 AM

Report for QIS OQI - 20422 No Title Provided

OQI Details

Status	Closed Approved
Subject	An unexpected mixed DNA profile was obtained for lab no. [REDACTED] ([REDACTED]) that had a major DNA profile matching the deceased in the matter, and a minor DNA profile matching a DNA profile obtained from a complainant in an apparently unrelated sexual assault matter [REDACTED]
Source of OQI	Internal Problems (QHPSS)
Date Identified	20/08/2008

OQI Creator Contact Details

Creator	Justin HOWES
Organisational Unit/ s	Forensic Reporting and Intelligence
Service/ s	
Site Location/ s	Coopers Plains

Investigator/ Actioner Contact Details

Actioner	Allan MCNEVIN
Organisational Unit/ s	Analytical
Service/ s	
Site Location/ s	Coopers Plains

Investigation Details

Investigation Completed	14/10/2008	Root Cause Type	Procedure/Method/Process
Investigation Details	<p>Sample [REDACTED] was extracted on extraction batch CWIQEXT20080506_02 in position 7. This sample gave a mixed DNA profile that was shown to be reproducible from the DNA extract on re-amplification. This result was not expected due to the nature of the sample and the case. The sample was able to separated into major and minor mixture components. It was found that the minor contributor matched to samples [REDACTED]. These samples were extracted from positions 23 & 24 of the same extraction batch (CWIQEXT20080506_02). The profiles obtained from [REDACTED] [REDACTED] are consistent with type of samples and the nature of the case. During the investigation, the stored lysate for all three samples we re-extracted, as well as the stored substrate. The re-extraction of the stored lysate (i.e. material retained after removal from para-magnetic resin during the automated DNA IQ extraction process) for each of the three samples gave results consistent with that obtained from the initial extraction process. From these results, it can be concluded that the contamination of sample [REDACTED] from either [REDACTED] must have occurred prior to the separation of the lysis solution and the para-magnetic resin. The re-extraction of the stored substrate (i.e. the material originally submitted for DNA</p>		

extraction that passed through the initial stages of the original extraction process) gave different results. In this instance the profile obtained from the substrate of [REDACTED] was consistent only with the major component obtained from the original extraction. The profiles obtained from re-extraction of substrates from samples 320124514 & [REDACTED] gave profiles consistent to that obtained from the original extraction. These two sets of results therefore indicate that contamination of sample [REDACTED] from either [REDACTED] & [REDACTED] has occurred after the manual lysis of the substrates (off-deck lysis procedure), but prior to completion of the removal of lysed material from para-magnetic resin during the automated portion of the extraction procedure. The potential steps at which contamination may have occurred are: 1. During the transfer of the lysate obtained from manual lysis into the deep-well plate via the use of the Storstar. This however is least likely. This is because lysate was added to well 7 prior to the addition of wells 23 or 24, and well 7 is physically covered and not adjacent to wells 23 & 24 during the storage process. 2. During the removal of the adhesive seal used to seal the deep-well plate containing stored lysates awaiting automated DNA IQ extraction. This is the most likely as it was noted during Audit 8227 that condensation on the seal that could not be removed by centrifugation was a contamination risk. Additionally, the random nature of potential aerosol formation and the physical positioning of samples also makes this scenario more likely. 3. There may have been operator error during the manual addition of DNA IQ para-magnetic resin during the start of the automated extraction procedure (i.e. incorrect pipetting procedure), however this is unlikely as staff are trained to perform such pipetting steps with due diligence and care. 4. During the 1st stage of removal of lysate from the para-magnetic resin to the storage plate. This procedure occurs twice during the automated extraction protocol (fresh disposable tips for each step). If there was drippage of the lysate containing unbound DNA and this was to drip from either wells 23 & 24 into well 7 (or bubble burst), this may account for the contamination event. However, the physical movement of the 8-tip arm during this liquid transfer makes this an unlikely proposition (i.e. once the tips retract from wells 23 & 24, it does not move directly over well 7).

Performed By Quality Information System

Action Details

Action Complete Title	14/10/2008	Action Fix Type	Changed Process _{As} a result of
		Action Description	previous OQI's raised and concerns identified around the automated DNA IQ extraction process, the extraction of samples using the automated DNA IQ procedure was halted on the 28-7-2008. Prior to this Audit 8227 had been commissioned and carried out. A number of areas for improvement were identified through the audit, and these have been implemented or are under investigation as outlined in OQI's 20367, 20368 and 20369. After the cessation of the automated DNA IQ extraction protocol, a review of all batches processed through this protocol was carried out by a specially commissioned team. A number of potential contamination events were identified and each is to be investigated on batch-by-batch basis. Additionally, careful review of results obtained from samples processed through the automated DNA IQ extraction procedure prior to reporting will be carried out. Every DNA result obtained from these samples will be interpreted with caution. Modifications have been made to the automated DNA IQ extraction procedure (including the use of an alternative to the adhesive seal). This modified procedure will undergo extensive verification and approval from the DNA Analysis management team prior to re-introduction. The contamination events and concerns and improvements etc. that surround the automated DNA IQ extraction procedure have been discussed at various departmental and team meetings.

Task Details

No Tasks found

Follow-up And Approval

Follow-up Status	Accepted
Follow-up Status Comment	<u>22/10/2008 8:52:59 AM Justin HOWES:</u> I accept the findings and agree that results from automated DNAIQ extractions need to be interpreted with caution, including using Eactraction Batch macros and checklists devised by DNA Analysis.
Approver	
Approval/ Rejection Date	22/10/2008
Approval/ Rejection Comment	<u>22/10/2008 8:52:59 AM Paula TAYLOR:</u> Checklists for interpretation of results are included in the case files. All investigations, findings and outcomes of these events will be compiled in a report.

Associations

No Associations found

Records

No Records found

20422 No Title Provided

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