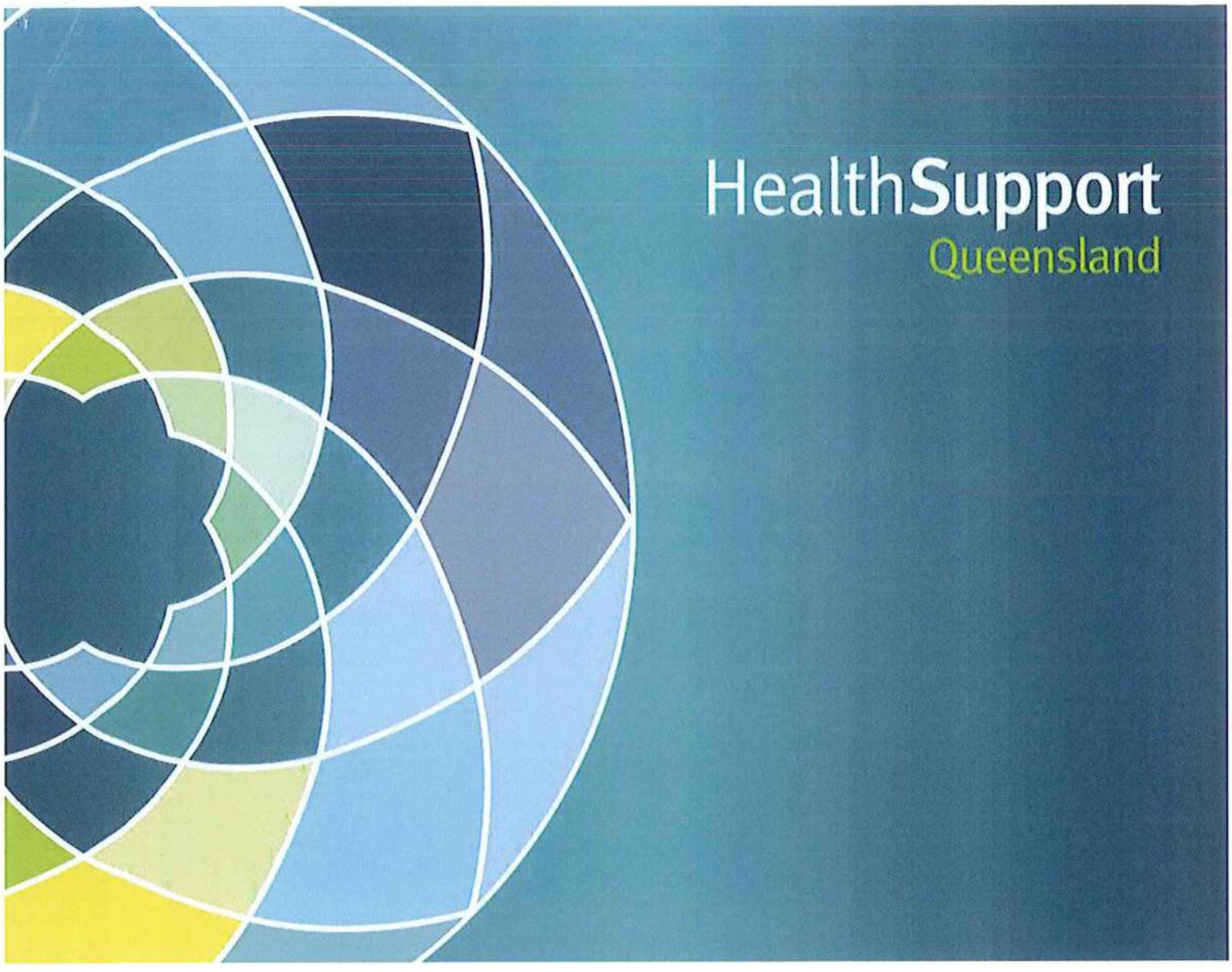

Proposal #163: Assessment of results obtained from 'auto-microcon' samples – Project plan

Josie Entwistle, Allison Lloyd, Kylie Rika, Cathie Allen

June 2015

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Published by the State of Queensland (Queensland Health), June 2015

For more information contact:
Forensic DNA Analysis, Department of Health, GPO Box 48, Brisbane QLD 4001

Document sign off

This document has been **approved** by:

Name	Position	Signature	Date
Cathie Allen	Managing Scientist	[redacted]	13/07/15

This document has been **endorsed** by:

Name	Position	Signature	Date
Justin Howes	Team Leader FRIT	[redacted]	10.07.15
Kirsten Scott	A/Team Leader ER & Q	[redacted]	10/07/2015
Sharon Johnstone	Senior Scientist Intel Team	[redacted]	13/07/15
Emma Caunt	A/Senior Scientist Q & P	[redacted]	10/07/15
Allan McNevin	Senior Scientist ER	[redacted]	13.07.2015
Luke Ryan	Senior Scientist Analytical	[redacted]	13-07-2015
Amanda Reeves	Senior Scientist Reporting 1	[redacted]	100715
Kylie Rika	Senior Scientist Reporting 2	[redacted]	10/07/2015

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1. Introduction

Currently (and since 19/12/12), any priority 1 or 2 PowerPlex® 21 (PP21) casework samples that produce DNA extracts with a quant value of between 0.00214 ng/µL and 0.0088 ng/uL are sent automatically for a concentration step using a Microcon® Centrifugal Filter Device.

It has been observed anecdotally that samples which have been sent automatically for concentration (quant between 0.00214 ng/µL and 0.0088 ng/µL) more often than not, yield a DNA profile result which is unsuitable for interpretation or comparison. In addition, the timeframe involved (from quant to result release) is lengthy, especially if the sample has required further amplification/s to enhance or confirm the profile result.

The current focus for Forensic DNA Analysis and QPS is to reduce our turn around time (TAT) on all crime scene samples processed.

It is proposed that an assessment of results obtained from these samples be conducted to assess the risks and benefits of continuing the automatic Microcon processing of samples that display a quant value between the current parameters of 0.00214 ng/µL and 0.0088 ng/µL; or whether an alternative parameter range, or cessation of this process entirely may be recommended.

Benefits of an alternative process or cessation of automatic Microcons could include:

- Reduction in TAT for samples that have been sent automatically for concentration
- Cost savings in consumables and human resources involved in the processing and interpretation of samples sent automatically for concentration
- Reduction in TAT for all samples (due to more staff processing samples with usable results),
- Possible reduction in submission of a certain sample type by QPS.

Risks associated with an alternative process or cessation of automatic Microcons could include:

- Loss of informative results
- No change to TAT
- No cost savings in consumables or human resources
- No change to submission of samples by QPS

2. Aims

1. To interrogate data in the auto-concentration range (0.00214 ng/µL – 0.0088 ng/µL) to assess the percentage of samples where the final reported result is 'informative' to QPS.

   An 'informative' result is defined by the following:

   - Single source
   - Two person mixtures
   - Three person mixtures

2. To interrogate the data to ascertain the risks and benefits of continuing processing of these samples or whether an alternative process (including cessation of automatic Microcons) may be recommended.

3. To put forward a recommendation to the Decision Making Group (Management Team) regarding the processing of these samples if there are any clear trends which support a change to the current parameters or automatic processing.

3. Materials

The following resources are required for this data mining project:

- Staff
- Computer time (including applications such as Excel and AUSLAB)

4. Methods

Using the extended enquiries functionality in AUSLAB, a data dump will be executed pertaining to all samples with MCONC1 test codes with a received date from 2012-2015(March) that have a 'parent' EXH (i.e. not sub-samples). This data dump will include the following fields:

Sample ID

QP Number

Result type (based on EXH line released)

NCIDD load

Original quant value

Additional quant values

Additional test codes

Sample type

Case type

A worksheet in excel will be created containing the data from the data dump.

The data will further be sorted into columns and refined/filtered to produce only concentrated samples within the laboratory's 'auto-microcon' quant range.

The data will then be interrogated in an attempt to observe any trends that may suggest proposing changes to current laboratory processing rules and workflow.

Results, observations and recommendations will be included in the final project report.