

Environmental Monitoring

1 PURPOSE & SCOPE

To describe Environmental Monitoring and provide guidelines for the Environmental testing to be carried out within DNA Analysis.

Where equipment, consumables, work areas or clothing come into contact with a sample or exhibit there is a possibility that DNA may transfer from these objects to the exhibits or sample. Environmental Sampling is used to monitor this DNA transfer/contamination and help reduce the chances of contamination to exhibits and samples.

This procedure shall apply to all Environmental Monitoring performed by DNA Analysis including all areas where Coronial / DVI / Skeletal Remains testing is conducted on behalf of DNA Analysis.

2 DEFINITIONS

Risk – Risk is assessed according to the probability that a contamination would occur, the frequency of exposure to the risk and the possible consequences of the contamination. The level of risk determines the level of investigation required in the event of a profile being obtained from the Environmental Monitoring Samples.

3 ACTIONS

1. Environmental Sampling

- 1.1 To monitor for incidental and accidental DNA contamination by staff and by samples/exhibits processed within DNA Analysis and to determine the efficacy of cleaning procedures within DNA Analysis.
- 1.2 In the DNA Analysis Laboratory, Environmental Monitoring involves the sampling of areas that may come into direct or indirect contact with exhibits (including samples from exhibits) prior, during or after sampling that may cause contamination eg. Contamination of subsequent samples from benches or pipettes.
- 1.3 Environmental Sampling shall be conducted on a monthly basis before the deep clean. All staff may be required to assist in this process. Operational officers that are deemed competent in environmental may perform this task. Sampling of the Skeletal Remains Project shall be performed by Skeletal Remains Project staff.
- 1.4 Once a year environmental sampling shall be conducted before and after deep clean.

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- d. Decontamination Room (part of Major Crime Sampling/Cleaning)
 - i. Clothesline (Used for crimelight examination and exhibit drying)
 - ii. Examination Bench

4. Sampling Process

- a. After the area for sampling has been chosen by the quality team, staff member will receive a list of area's to sample with a packet of swabs and barcodes
 - i. open a sterile swab
 - ii. moisten the swab with Nanopure water
 - iii. rub the swab head along the surface of the object to be tested
 - iv. assign each swab a unique barcode
 - v. label accordingly including the area and item the sample was taken from (ie Major Crime –bay 2 , work bench)
 - vi. Information and barcode is to be placed on list from quality team for future reference.
 - vii. Once swabs are sub-sampled the information and barcodes are transferred on to form (17034) and stored in the Environmental Sampling folder, kept within the quality team.

5. Registration of the Environmental Sampling "Case" in AUSLAB

- a. From the main menu
 - i. "1 Request Registration"
 - ii. "1 Full Reception Entry"
 - iii. Enter a new barcode in Lab Number Field – this will be the Case number
 - iv. UR /Case No. starts with the prefix FBE and is generated by the month and year the sample was taken eg. A sample taken in Feb 05 would have the UR/Case No. FBE0205.
 - v. SURNAME: ENVIRONMENTAL SAMPLING
 - vi. Collected "?Date of Collection"
 - vii. Received"? Same as collection date"
 - viii. Specimen = Case
 - ix. Loc./Client = FBQC
 - x. Order a CS [enter] and a MILE [enter]
 - xi. F7 (billing) category = NFO, Requested Date = Same as Date Collected, F4, F4.

6. Registration of Environmental Samples in AUSLAB

- a. From the main menu
 - i. "1 Request Registration"
 - ii. "1 Full Reception Entry"
 - iii. Enter the assigned environmental swab lab number in Lab Number Field
 - iv. Enter the assigned FBE No into the UR /Case No. field eg. A sample taken in Feb 05 would have the UR/Case No. FBE0205.
 - v. SURNAME: ENVIRONMENTAL SAMPLING
 - vi. Collected "?Date of Collection"

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- i. As mortuary and histopathology staff routinely use the multi-purpose laboratory, it is standard procedure for the DNA Analysis staff to clean all work surfaces with a 10x bleach/ 70% ethanol before commencing their sampling.

9. Results

- a. Results should be collated by the Quality team and results discussed with area supervisors. A report will be sent to all area supervisors on a monthly basis regarding any profiles found and any action taken.

b. Assessing the initial results

- i. Priority - The results of environmental sampling should be given priority and followed up in a timely manner.
- ii. Optimal Result - The optimal result for all environmental samples is a quant value of 0ng/uL and no DNA profile.
- iii. Profile Obtained - All environmental samples that produce a DNA profile should undergo investigation (according to the level of risk). Any samples that produce a partial DNA profile (including NR's) or no profile but a quant value of $\geq 0.1\text{ng/uL}$ should be microcon concentrated to assist in identifying the source of contamination.

1. If these samples are not microcon concentrated the reason for not completing the testing shall be recorded by the quality officer.
2. If the partial profile has sufficient alleles to identify the source of contamination then no further reworking is required.

c. Assessing the final result

i. Contamination

1. Check against Staff - Run the profile through the "StaffMatch" macro to determine if the DNA profile obtained is a staff profile. Ensure that the check includes a search down to 5 loci.
2. Check against Crime Scene and Person Samples – Run the profile through staff match using the "Multi – Line on Query Sequence Only". This allows a choice of searching KOD, DNAMaster, 3100 Upload Tables and Older DNAMasters if necessary. Ensure that the check includes a search down to 5 loci.
3. These checks should help to determine the source of the contamination and determine if the contamination is the result of prolonged exposure or due to a sample contamination instead.
4. If an unknown profile is located this should be added to the staff match macro in AUSLAB and in I drive.

d. Risk Assessment

- i. Where a full or partial profile is obtained a risk assessment shall be performed to determine the actual risk to the samples or exhibits. Refer to 22872 Change Management Template for Risk Assessment Form.

*Environmental Monitoring***7 AMENDMENT HISTORY**

Revision	Date	Author/s	Amendments
0	05 Oct 2005	Mary Gardam	First Issue
1	13 Feb 2007	Mary Gardam	DNA Priority added. Unknown profiles added.
1	April 2008	QIS2 Migration Project	Headers and Footers changed to new CaSS format. Amended Business references from QHSS to FSS, QHPSS to CaSS and QHPS to Pathology Queensland
2	13 May 2008	C Revera	Major Revision
Version	April 09	QIS2 Migration Project	Changed revision to version and updated hyperlinks for QIS2
3			

Not Current



13.1 Appendix I. MultiPROBE® II Maintenance Log

Operation and Maintenance

Instrument Serial No.: *DT 100 50015*
DT 100 50103

Month: **March** Day: **March**

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Clean deck	✓	✓	✓	✓	✓																											
Initialise system	✓	✓	✓	✓	✓																											
Inspect syringes & tubing	✓	✓	✓	✓	✓																											
Check waste	✓	✓	✓	✓	✓																											
Flush/Wash	✓	✓	✓	✓	✓																											
Initials	LWC	LWC	LWC	LWC	CI																											
Clean deck	✓	✓	✓	✓	✓																											
Overnight Flush/Wash	✓	✓	✓	✓	✓																											
Initials	LWC	LWC	LWC	LWC	CI																											
Week																																
TriGene™ Clean	✓																															
Clean probes with alcohol	✓																															
Inspect syringes & tubing	✓																															
Clean Z-racks	✓																															
Clean system liquid bottle	✓																															
Startup/initialise	✓																															
Random Move Test	✓																															
Flush/Wash	✓																															
Check Database size	27.7																															
Shutdown																																
Initials	LWC				LWC				CI																							
Environmental clean					✓																											
Calibrate 8-tip arm					✓																											
Test liquid level sense					✓																											
Maintain database					✓																											
Initials					CI																											