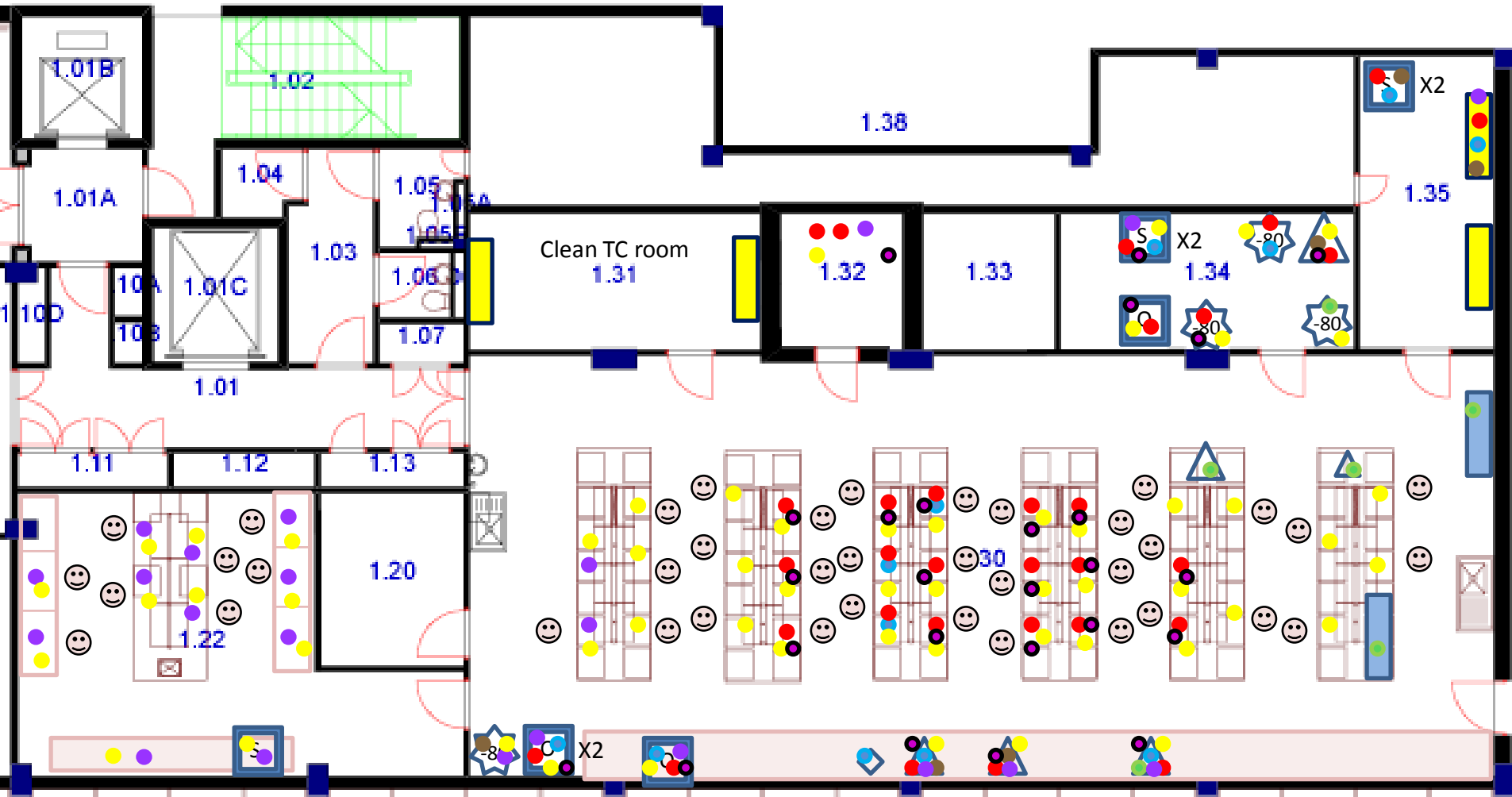


Loss of Containment

Anton de Paiva

Deputy Safety Director and BioRisk Manager





Legionella pneumophila



EHEC



Clostridium difficile



Chlamydia trachomatis



Pseudomonas aeruginosa



E. coli (CI1)



Campilobacter jejuni



plate reader



centrifuge



orbital incubator



static incubator



X2 stacked



-80 freezer







What went wrong?

The approved risk assessment described;

- Use of TC flasks – not plates
- Use of biosealed centrifuge buckets
- Use of double containment at all times when outside of the safety cabinet

INSTEAD

- New post doc comes in with new technique

Training gaps (ravines)

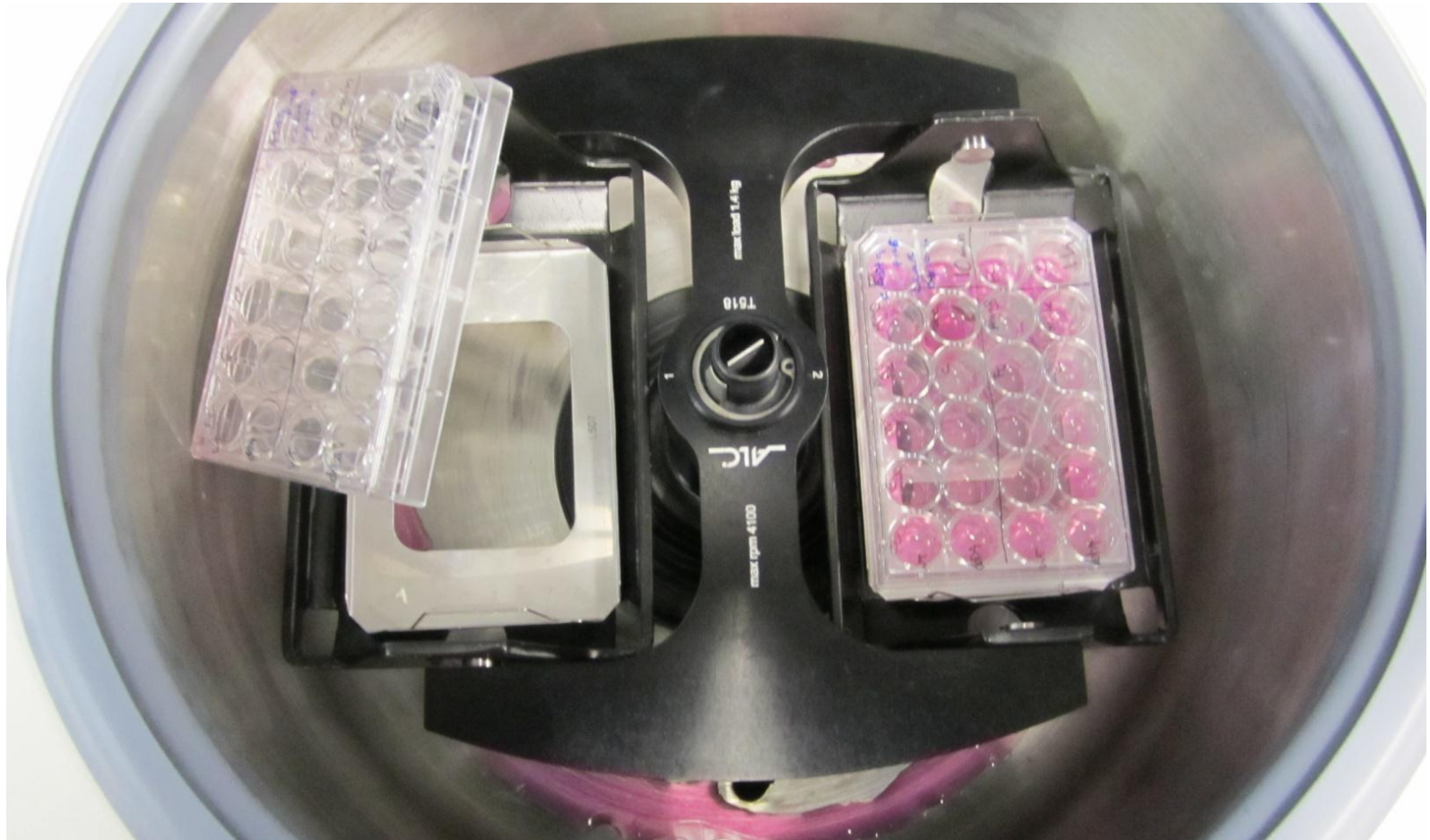
- All the laboratory workers involved had attended basic laboratory safety training and induction
- However there was no recorded training in the use of the centrifuges and no records of any other training on laboratory equipment or in specific work related procedures
- Centrifuge was later described by the PI as being just like a “washing machine”

Lack of maintenance...



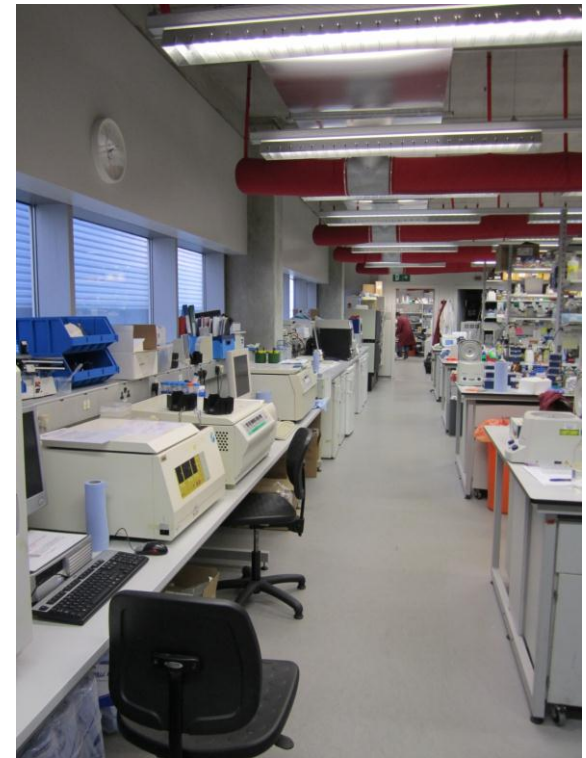
'Human error'

Failure to observe documented emergency procedure



Consequences of this loss of containment

- 3 members of staff on prophylaxis
- Lab evacuated (eventually)
- Work suspended pending the outcomes of the investigation
- HSE notified under the CU regs
- Improvement notice under 5.1 of the MHSWR to improve inspection and monitoring
- Formal letter (and a narrow escape from prosecution)



HSE letter

- risk assessments for work with Biological agents and GMM's identify all reasonable hazards
- those with responsibility for undertaking or approving risk assessments receive adequate training
- there is a regular review of procedures and practices to ensure that necessary control measures are being used effectively
- arrangements identify specific health and safety needs of their students and employees based on their work activities and ensure that adequate health and safety training is provided and documented
- relevant staff and students are registered with the College Occupational Health providers. The Imperial College Occupational Health Policy on provision of clinical services to students is outlined below
- Review arrangements for the planned preventative maintenance of safety related equipment
- The systems of work in laboratory 1.35 should be reviewed.









The immediate response

Problem spotted from outside

But no way then to turn the incubator off.

No way to open the incubator to fumigate inside.

This was a significant loss of containment.

But as this was in a CL3 what was the risk of exposure?

Remedial actions

Review of all Infors units.

Review of PI620 usage and methods of use.

Issue of RPE for bio use

Review of ability to isolate power from outside the CL3

But lightning does strike twice

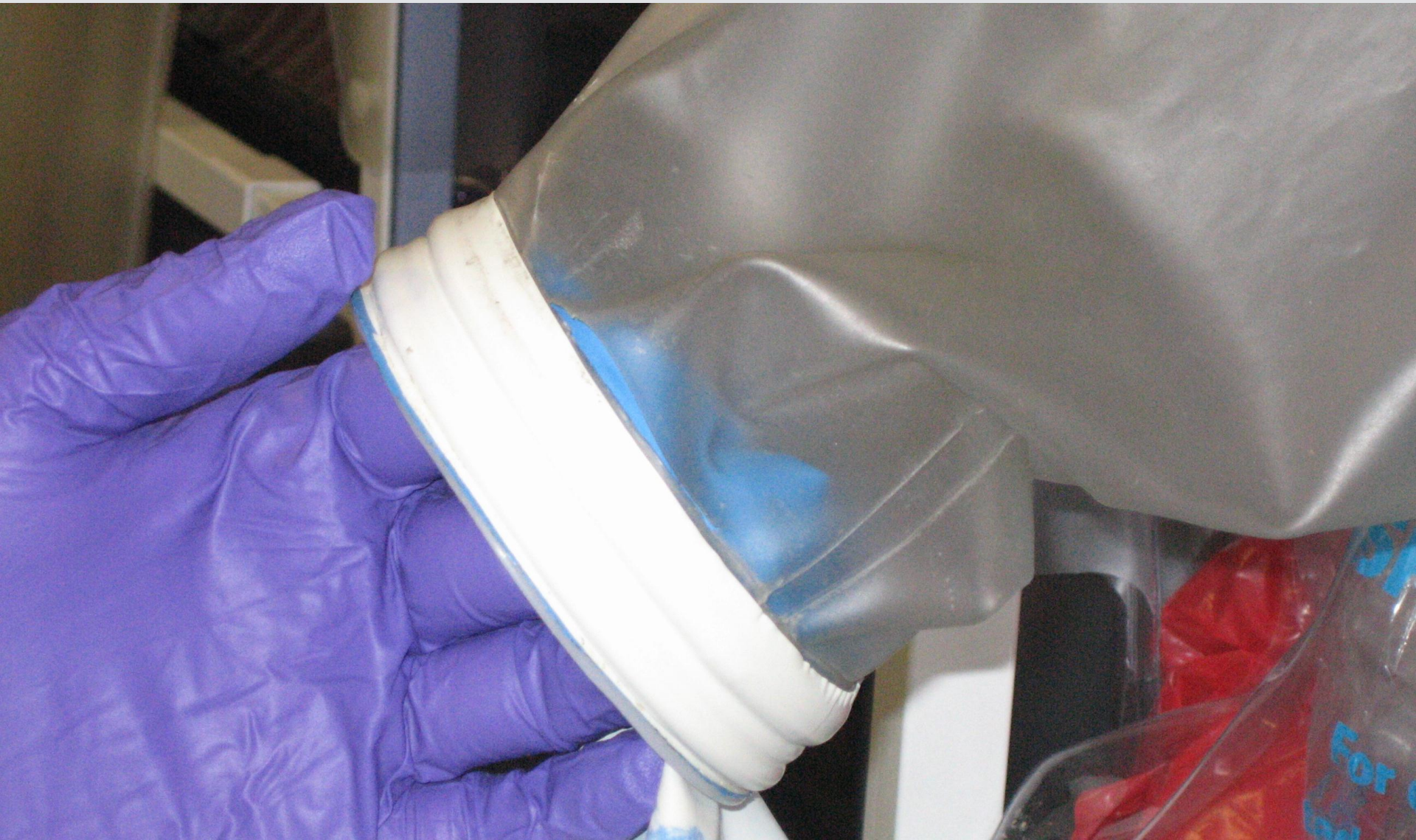




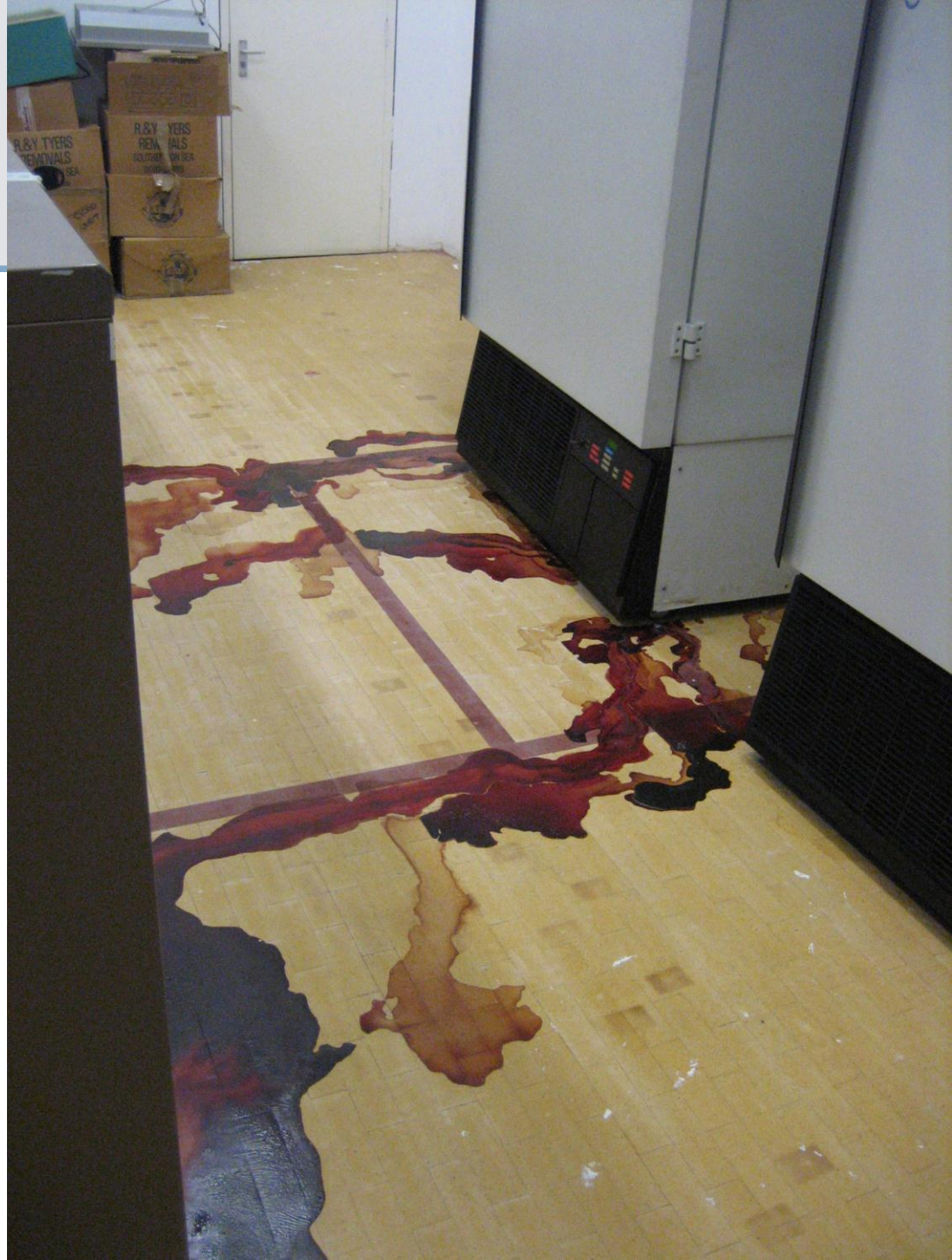
Losses of containment

Type 1

Known or highly likely through incident



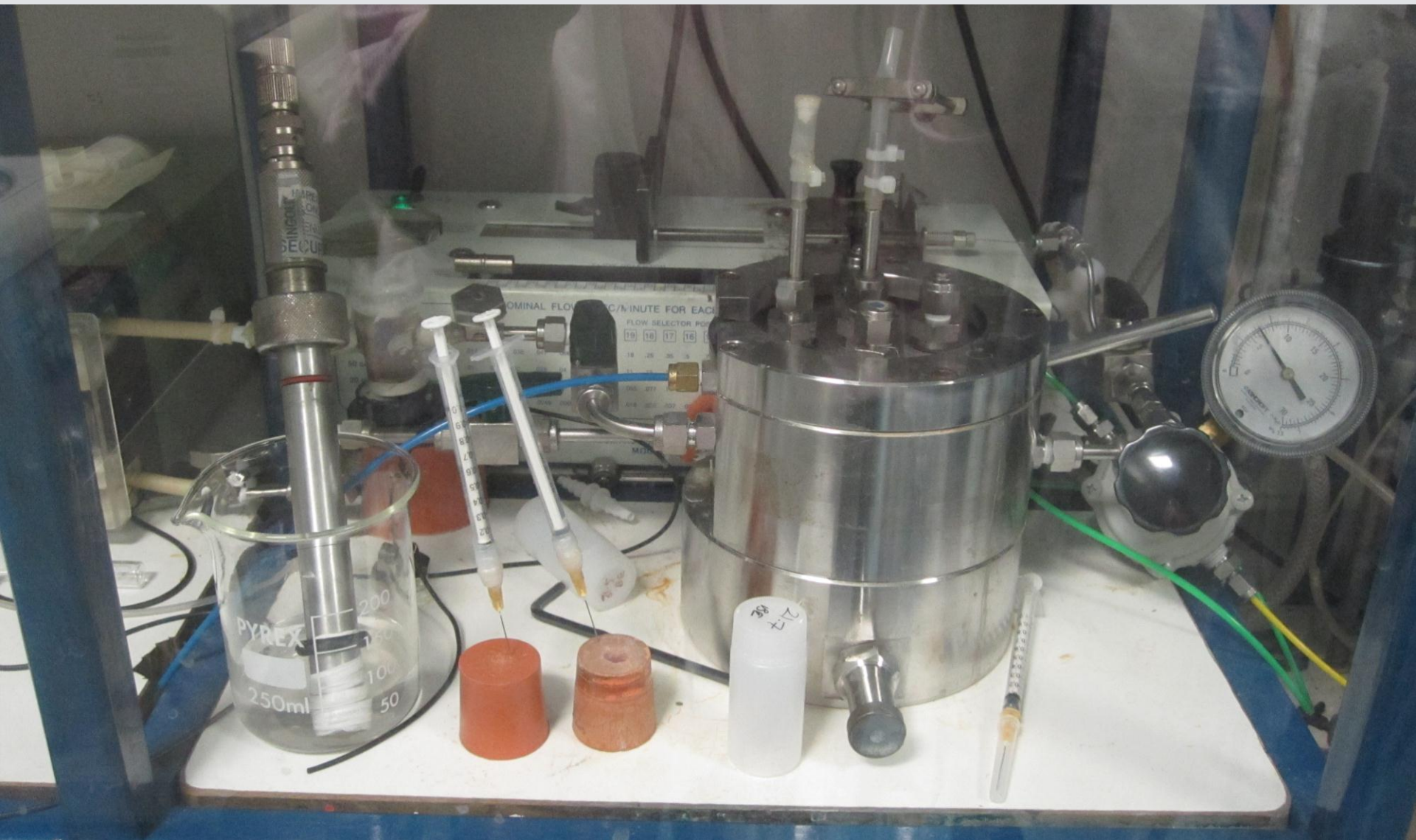




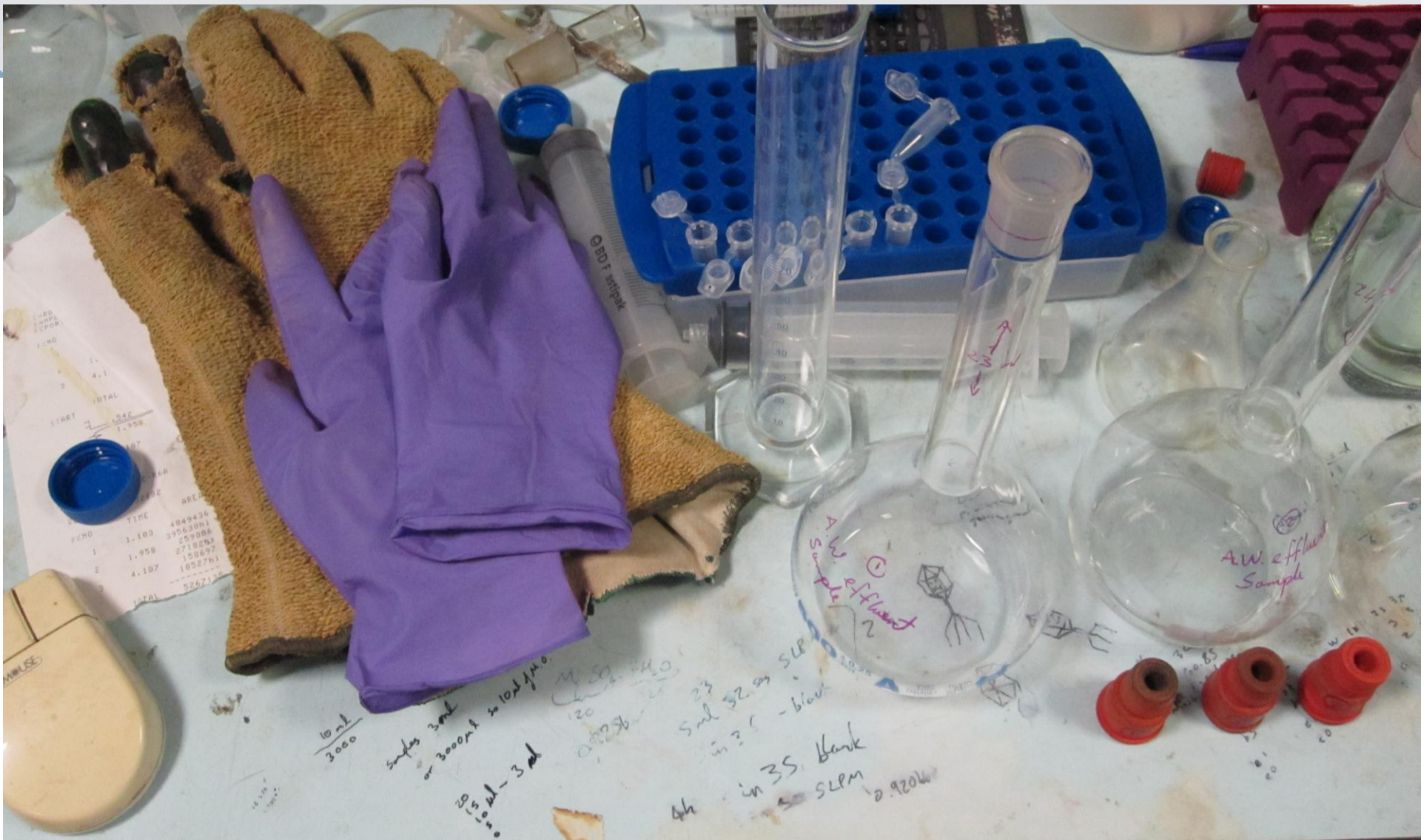
Losses of containment

Type 2

Highly likely through practice











Losses of containment

Type 3

Unrecognised losses of containment

Are these losses of containment

Discuss....



12/05/2010 10:10



12/05/2010 10:09

