

Microbiology Safety and Staff Induction Manual

**University of Tasmania
Launceston Campus**

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1. ABOUT THIS MANUAL

- The rules set out in this document apply to the conduct of staff and students working in the Microbiology Laboratories at the Launceston campus of The University of Tasmania. For the purposes of this document, “Microbiology Laboratories” relates to those rooms within the complex and consists of the: anteroom (M102), Aquaculture micro lab (M108), HS micro lab (M111), preparation room 1 (M110), preparation room 2 (M109), cold store (M110b), hot store (M110a), store room (M109a) and special project room (M106).
- This manual is designed to assist staff and students in achieving safe work practices and maintaining a safe working environment, however, no finite set of rules will fit all circumstances and the exercise of common sense is essential. If situations occur where doubt exists about safety issues, then the **Microbiology Safety Officer** or other senior staff should be consulted.
- It will be an important document for the induction of new staff and is essential reading for practical demonstrators who bear the added responsibility for the safety of students under their control. Post-graduate students that are given increased privileges and responsibilities in the microbiology laboratories are also expected to be familiar with the content and implications of the manual.
- Staff members working in this laboratory must be familiar with the reference safety document published by the Australian Standards Association - “**Safety in laboratories, Part 3: Microbiology**” (AS 2243.3:1995). Copies of this document are available from either of the Microbiology Safety Officers.

2. MICROBIOLOGY SAFETY OFFICER

- The Safety Officers responsible for the Microbiology Laboratories are Dr Stephen Tristram (Health Sciences, Ext 5469, Room C213) and Mr Mike Williams (Aquaculture, Ext 3894, Room S332).
- In the absence of either Safety Officers, a microbiology staff member (general or academic) should be consulted.
- Notwithstanding the roles of the Microbiology Safety Officers in offering and providing guidance on microbiological safety issues, the Employee Safety Representative for the School of Health Sciences will need to be involved for purposes of officially reporting and dealing with specific incidents or identified safety hazards. See section 10: Reporting of Incidents.

3. ACCESS

- Access to the laboratory is restricted to individuals with an understanding of the safety practices employed in the laboratory.
- All staff and students who work unsupervised in the laboratory must complete an induction program and sign a declaration stating that they understand their obligations. See induction.
- The laboratory doors are to be kept closed at all times, and furthermore the outer door must be locked unless a staff member is on the premises.
- Undergraduate students are not permitted to work without a staff member being present in the laboratory complex, and may only work without direct supervision when authorised by a Microbiology Safety Officer. Such authorisation must be in writing (see appendix 1) and sighted by the staff member designated to be present in the laboratory complex while the work is in progress.
- Postgraduate students may work without direct supervision, but must be fully conversant with this manual, and have completed the induction program (see induction).
- Students are not to bring visitors into the laboratories without the permission of a staff member.

3.1 Out of Hours Access

- For OUT OF HOURS access, that is any time other than 0800 to 1800 Monday to Friday, staff or students, are requested to log in and out of the laboratory by phoning security.

4. INDUCTION

All staff and post graduate students that have the need to work unsupervised in the Microbiology laboratories, need to complete the induction program as detailed below. This induction process should be undertaken under the guidance of one of the Microbiology Safety Officers.

- 1) Read the Microbiology Safety and Staff Induction Manual.
- 2) Have a tour of the facility with the person guiding the induction.
- 3) Depending on the intended activities of the person being inducted, specific instruction on the use of the autoclave, biological safety cabinet and liquid nitrogen storage system may be necessary.
- 4) Complete and sign the Induction Form (see appendix)

The completed and signed induction forms are to be kept in the Microbiology Laboratory.

5. LABORATORY RULES

This set of “rules” is an abbreviated set to which all students must be introduced before commencing any work in the laboratory. Ideally, these rules should be included in all “Practical Manuals” and reinforced formally at the beginning of each unit of study. Likewise, Section 5 (Personal Protective Equipment and Procedures) should also be included in those manuals.

5.1 General Conduct

- Every individual that enters the laboratory has a duty of care to other users, and is expected to behave in a manner that does not compromise the safety of others.
- Regard all organisms and biological materials used in this laboratory as potentially infectious and pathogenic to humans.
- Coats, jackets and other outer apparel should be left outside the laboratory, together with bags and books not required for the laboratory session. Long hair should be tied back neatly, away from the shoulders and enclosed footwear should be worn - (thongs and open sandals are not allowed).
- Eating or drinking are not allowed anywhere within the laboratories.
- Avoid placing any object in your mouth - (pencils, pens, fingers etc). Mouth pipetting is strictly forbidden in the microbiology laboratory.
- Cover any open cuts on hands and other exposed skin surfaces and/or wear gloves.
- Laboratory gowns are provided for your protection and **must** be worn inside the laboratory and are not to be worn outside the laboratory for any reason. At the end of the laboratory session please return the gown to the hook, neatly folded, inside out. If your gown becomes “soiled” during the practical, please advise the demonstrator.
- Familiarise yourself with the location and operation of the following emergency items for each laboratory;
 - First aid kit
 - Fire extinguisher/blanket
 - Gas isolation switch
 - Eyewash station
 - Exits

- Carry out procedures so as to minimise the risks of spills, splashes and the production of aerosols. This applies particularly to the flaming of the bacteriological loop: the loop should be drawn gradually from the cooler to the hotter parts of the flame.
- If you have an accident of any kind **call the instructor immediately**.
- For minor spills, put on gloves, cover spill with paper towel and pour on disinfectant. Leave for 10 minutes and then mop up.
- The working area should be wiped with disinfectant at the **beginning and end** of the laboratory session. Always wash your hands before leaving the laboratory.
- No slides or cultures are to be taken from, or brought into the laboratory without permission of the Laboratory Safety Officer.

5.2 Waste Disposal

The waste disposal protocol in the Microbiology Laboratory is designed to separate the non-infectious from the infectious waste. The infectious waste needs to be disposed of in a manner that minimizes the risk to both staff and students and facilitates the recycling of reusable material.

Please follow the instructions carefully and if in doubt - ASK!

5.2.1 Sharps

- There is a dedicated “yellow” sharps container at the back of each laboratory.
- Needles, scalpel blades and other sharp materials are to be disposed of in these containers.
- Always move the “sharps container” to your work place to dispose of such items. Do not under any circumstances wander around the laboratory carrying sharps.

5.2.2 Biogram Buckets

- Containers of general purpose phenolic laboratory disinfectant (biogram) are located at each work station.

- They are to be used for disposal of small items of contaminated waste, eg. used swabs, capillary tubes, wet slides, pipettes, inoculated reagent strips and glass culture tubes. When disposing of pipettes, ensure they are placed tip first into the biogram to prevent splashes and aerosol production.
- They are not to be used for Gram stains, non contaminated paper or matches.

5.2.3 Biohazard Bin

- A biohazard bin is located in the centre of each laboratory.
- These bins are to be used for the disposal of contaminated waste, eg. used culture plates and contaminated paper towel.
- They are not to be used for sharps or any non contaminated paper wastes.
- Do NOT use these bins for paper towel discarded after handwashing, nor for blotting paper discarded after blotting slides.

5.2.4 Billy Cans

- Two stainless steel tins are located at the front of each laboratory.
- Container 1: used for both contaminated and non contaminated recyclable glass or plastic tubes. Before placing items in the container please ensure that they are capped and that sticky labels are removed.
- Container 2: used for fixed and stained slides. This container is not to be used for disposal of “wet slides” – which should be disposed of into biogram buckets.

5.2.5 Paper Bin

To be used for non contaminated paper waste only, eg. Paper towel from handwashing (but not bench wiping) and blotting paper from blotting Gram stains.

5.2.6 Broken Glass

- When any glassware is broken, notify the instructor immediately for assistance with disposal.

- Non contaminated broken glass can be disposed of in the glass bin which is located in preparation room 2.
- Contaminated broken glassware should be placed into a stainless steel billy and autoclaved prior to disposal in the glass bin.

6. PC2 Practices and GMO's

The Microbiology laboratories are certified as PC2 (Physical containment level 2) under the auspices of the Office of the Gene Technology Regulator (OGTR) for the purposes of performing work with genetically modified organisms (GMO's).

A condition of this certification is that:

ALL WORK performed in the laboratory should be performed according to the PC2 facility laboratory procedures (see below) irrespective of whether the organisms being used in a given instance are or are not GMO's.

The following section of the manual is extracted from the OGTR publication, "Guidelines for Certification and Physical Containment Facilities PC2 Laboratory Version 3.1 - issued July 2007)

Guidelines for Certification of a Physical Containment Level 2 Laboratory

Version 3.2– Effective 1 March 2013

The guidelines (Part A) contain the requirements for certification of a Physical Containment Level 2 (PC2) Laboratory issued pursuant to section 90 of the *Gene Technology Act 2000* (the Act).

Once a facility is certified, the certification instrument imposes conditions on the facility pursuant to section 86 of the Act. The conditions of certification (Part B), detail the usual conditions that will apply to a PC2 Laboratory. Individual certification conditions may differ from these in some respect but generally an applicant can expect that their conditions will closely follow those published here. Once issued, the conditions may be varied by the Gene Technology Regulator as necessary and appropriate.

When planning a new facility, proposing to apply for certification of an existing facility or varying an existing certification, an assessment of the risks of GMOs escaping in an emergency event should be undertaken. Emergency events include, but are not limited to flooding, coastal storm surges or land slippage. If the risk assessment determines that there is a greater than negligible risk from the emergency event, then the applicant should develop a risk management plan to assist them in minimising the risks of the emergency event.

The risk management plan may include, for example, removal or destruction of GMOs and decontamination of equipment and surfaces or other measures well before the event impacts the facility. Consideration should be given to the resources needed to implement the risk management plan, and their availability, during such events.

A list of the Australian/New Zealand Standards that are referenced throughout this document is also attached.

A separate document - *Explanatory Information on Guidelines for Certification of Physical Containment Facilities* - contains details about the process of certification.

This document can be downloaded from the OGTR website <www.ogtr.gov.au>.

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Part A

Requirements for Certification

Physical Containment Level 2 Laboratory Version 3.2 – Effective 1 March 2013

CONTAINMENT REQUIREMENTS THAT MUST BE MET IN ORDER FOR A PHYSICAL CONTAINMENT LEVEL 2 (PC2) LABORATORY TO BE CERTIFIED BY THE GENE TECHNOLOGY REGULATOR (THE REGULATOR).

Section 90 of the *Gene Technology Act 2000*

These are the requirements for the certification of a PC2 Laboratory issued under section 90 of the *Gene Technology Act 2000* (the Act) and, as applicable, corresponding State legislation. These requirements apply to applications for certification of PC2 Laboratories received on or after the day on which these guidelines take effect.

To be granted certification, a facility must meet each of the requirements for certification of a PC2 Laboratory, unless the facility receives a written exemption from meeting a particular requirement from the Regulator or a delegate of the Regulator. Additional conditions may also be imposed on the facility by the Regulator or delegate of the Regulator.

Definitions and acronyms

Unless defined otherwise in this document, words and phrases used in this document have the same meaning as in the Act and the Gene Technology Regulations 2001 (the Regulations).

Words in the singular include the plural and words in the plural include the singular. Where any word or phrase is given a defined meaning, any other part of speech or other grammatical form in respect of that word has a corresponding meaning.

aerosol	Suspension in air of finely dispersed solids and/or liquids.
autoclave	Pressure steam steriliser.

dealing or deal with	<p>In relation to a GMO, means the following:</p> <ul style="list-style-type: none"> (a) conduct experiments with the GMO; (b) make, develop, produce or manufacture the GMO; (c) breed the GMO; (d) propagate the GMO; (e) use the GMO in the course of manufacture of a thing that is not the GMO; (f) grow, raise or culture the GMO; (g) import the GMO; (h) transport the GMO; (i) dispose of the GMO; <p>and includes the possession, supply or use of the GMO for the purposes of, or in the course of, a dealing mentioned in any of the paragraphs (a) to (i).</p>
decontamination	A physical or chemical process which removes, kills or renders non-viable the GMOs used. In the case of micro-organisms this may not necessarily result in sterility.
environment	Includes: <ul style="list-style-type: none"> (a) ecosystems and their constituent parts; (b) natural and physical resources; and (c) the qualities and characteristics of locations, places and areas.
facility	The whole of the space that is to be certified by the Regulator to a specific level of containment.
GM	Genetically modified.
GMO	Genetically modified organism.
micro-organism	An organism too small to be viewed by the unaided eye, including bacteria, fungi, viruses and some multicellular organisms. For the purposes of these guidelines, this definition includes replication defective viral vectors.
OGTR	Office of the Gene Technology Regulator.
PC2	Physical Containment Level 2.
personal protective equipment	Any devices or equipment, including clothing, designed to be worn or held by a person on its own, or part of a system, to protect against exposure to GMOs.
pest	An unwanted organism that could cause cross-contamination within the facility or compromise containment of the GMO.
primary container	The container directly surrounding the GMO.
risk group 2 organism	An organism that satisfies the criteria in AS/NZS 2243.3 for classification as Risk Group 2

sealed	Able to contain all GMOs or the reproductive material of GM plants or GM aquatic organisms (including pollen or gametes) being transported or stored, and able to remain closed during all reasonably expected conditions of transport and storage.
secondary container	The container immediately surrounding the primary container.
the Regulator	The Gene Technology Regulator.
viable	Micro-organisms, cells and cell cultures: <ul style="list-style-type: none"> • able to survive or multiply even though resuscitation procedures may be required, e.g. when sub-lethally damaged by being frozen, dried, heated, or affected by chemicals, including decontamination agents. Other organisms, whole or part: <ul style="list-style-type: none"> • able to live and grow independently of its parent or source organism, or able to reproduce or contribute genetic material to reproduction (e.g. sperm, ova, pollen, seeds, vegetative propagules).

Facility and fittings requirements

1. The facility to be certified must be a fully enclosable space bounded by walls, doors, windows, floors and ceilings. The facility doors and windows must be lockable or otherwise able to be secured.

NOTE: The walls, doors, windows, floors and ceilings form the physical containment barrier of the facility where dealings with GMOs will be conducted. This barrier protects all spaces outside the facility, including internal spaces of buildings in which a certified facility is located, and the environment.

2. The following surfaces in the facility must be smooth, impermeable to water, easily cleanable, and resistant to damage by the cleaning agents and/or decontamination agents that will be used in the facility:
 - (a) walls, floors, doors, windows and benches;
 - (b) furniture, including seating; and
 - (c) any other surfaces, where contamination is likely to occur or where decontamination is required.
3. Open spaces between and under benches, cabinets and equipment in the facility must be accessible for decontamination.

NOTE: The requirement for access to open spaces is to allow for easier decontamination of spills and prevent any persistence of GMOs on the floor.

4. The facility must contain either a dedicated wash-basin fitted with taps of the hands-free operation type or some other means of decontaminating hands.

NOTE: Decontamination of hands is considered an important means of preventing unintentional release of GMOs and protecting the health of facility personnel. If wash basins are to be used, the provision of

hand-operated taps is not acceptable, as they can be a source of contamination.

Alternatives to wash-basins, such as dispensers filled with decontaminant solutions, are considered suitable.

5. Eyewash equipment (either plumbed eyewash equipment or single-use packs of sterile eye irrigation fluids) must be provided within the facility.

NOTE: The Regulator does not require the placement of more than one piece of eyewash equipment in the facility. Consideration should be given to the provision of appropriate forms of eye protection.

6. If any proposed dealings in the facility with GM micro-organisms will produce aerosols containing Risk Group 2 GM micro-organisms, then the facility must contain a biological safety cabinet or other equipment specifically approved in writing by the Regulator that is designed to contain aerosols.

Where a Class I or Class II biological safety cabinet is installed, it must be installed in accordance with the requirements of AS 2252.4.

7. Where the facility complies with AS/NZS 2243.3 in relation to backflow prevention requirements for water supplied to the facility, no backflow prevention assessment is required.
8. Where the facility does not comply with AS/NZS 2243.3 in relation to backflow prevention requirements for water supplied to the facility, an assessment must be undertaken to determine whether backflow prevention on the water supplied to the facility is necessary.

NOTE: Consideration should be given in the assessment to the potential hazards of the GMOs that are proposed to be dealt with in the facility; the presence of cross-connections, devices or systems that may cause contamination of a water supply connected directly or indirectly to any part of a water service; and the likelihood of a backflow event.

If it is determined that backflow prevention is necessary then backflow prevention measures, appropriate for the risks posed by the GMOs proposed to be dealt with in the facility, must be implemented.

Documentation which demonstrates the backflow prevention assessment, and any backflow prevention measures implemented, must be kept and made available to the Regulator if requested.

NOTE: AS/NZS 3500.1 specifies the requirements and methods for the prevention of contamination of potable water within the water service and the water main, and provides for the selection and installation of backflow prevention devices.

9. Designated storage or hanging provisions for personal protective equipment must be available in the facility.

Capacity to comply with certification conditions

10. The applicant must be able to demonstrate a capacity to comply with the conditions of certification that will generally be applied to a certified PC2 Laboratory. These conditions are found in Part B of this document.

Information required with application forms

11. In addition to identifying the rooms to be certified, the floor plans for the facility submitted with the application must clearly identify rooms or spaces that are lifts, toilets, bathrooms, kitchens, lunch rooms and offices with carpets.

NOTE: The Regulator would not usually certify the above rooms as part of the certified facility.

Part B

Conditions of Certification

Physical Containment Level 2 Laboratory Version 3.2 – Effective 1 March 2013

Conditions are imposed on facilities by the Regulator at the time of certification pursuant to section 86 of the *Gene Technology Act 2000* (the Act) and, as applicable, corresponding State legislation. The condition clauses in this section are the ones that can be expected, in most cases, to be included in the certification instrument as the conditions of certification for a Physical Containment Level 2 (PC2) Laboratory.

Where a specific condition in this document conflicts with a condition of a licence, the Gene Technology Regulations 2001 (the Regulations), or any applicable guidelines issued under Section 27(d) of the Act, then the condition of a licence, the Regulations, or applicable guidelines prevails.

Definitions and acronyms

The definitions and acronyms found in Part A of this document also apply to Parts B and C.

Obligations of the certification holder in respect of users of the facility

1. While any dealings with GMOs are being conducted in the facility, the certification holder must ensure that access to the facility is restricted to authorised persons.
2. For purposes of condition 1, an authorised person is a person who:
 - (a) intends to undertake dealings, and has been trained in accordance with the Behavioural Requirements listed at Part C of this document;
 - (b) has signed, dated and provided to the certification holder a record of the training referred to in paragraph 2(a) above; and
 - (c) has not been excluded from the facility by the certification holder on the direction of the Regulator; or
 - (d) is an individual, or class of person, who does not intend to undertake dealings and has the permission of the certification holder, the facility manager or other representative of the certification holder, to enter the facility.
3. If the Regulator requests the certification holder to provide a signed and dated record of the training provided to a particular authorised person, or class of person, the signed and dated record of that training must be available to the Regulator within a time period stipulated by the Regulator.

NOTE: These records may be in an electronic format.

4. If the Regulator directs the certification holder to exclude a person, or class of person, from entry to the facility on the grounds that the person, or class of person:

- (a) has behaved, or is behaving, in a manner which has caused, or which may cause, GMOs to escape from the facility; or
 - (b) has behaved, or is behaving, in a manner which has exposed, or exposes, other persons in the facility to a GMO in circumstances where the exposure causes, or is capable of causing, a threat to the health and safety of those other persons;
the certification holder must exclude that person, or class of person, from the facility unless and until otherwise directed by the Regulator.
5. If the Regulator directs the certification holder to admit a person, or class of person, to the facility subject to conditions, the certification holder must only admit the person, or class of person, subject to those conditions.
 6. For the purposes of condition 5, before admitting a person, or class of person, subject to conditions, the certification holder must notify the person(s) of any conditions that apply to them.
 7. If the Regulator invites the certification holder to make a submission on whether or not a person, or class of person, should:
 - (a) be excluded from entry to the facility; or
 - (b) be admitted to the facility subject to conditions;
the certification holder may make such a submission within a time period stipulated by the Regulator.
 8. If the certification holder is not the owner of the facility and does not have the authority to admit and exclude persons from the premises, the certification holder must not allow dealings in the facility until such authority is obtained in writing from the owner of the facility. If the certification holder does not have the capacity to prevent dealings from occurring, the certification holder must notify the Regulator of this in writing as soon as practicable.
 9. The Regulator or a person authorised by the Regulator must, at all reasonable times, be allowed to enter the facility for the purposes of auditing or monitoring the conditions applying to the facility and any dealings being conducted in it.

Work not permitted in this facility type

10. Unless otherwise agreed to in writing by the Regulator, the following work must not be conducted in this facility:
 - (a) dealings with any GMO that under the conditions of a licence or legislation requires containment in any physical containment level higher than PC2;
 - (b) the housing/keeping/rearing of any animals, invertebrates, or aquatic organisms, for longer than the minimum time required to complete laboratory procedures on them;
 - (c) the housing/keeping/rearing of any plants for longer than the minimum time required to complete laboratory procedures on them except those in tissue

culture, contained in a plant growth cabinet or other containment device approved in writing by the Regulator;

- (d) dealings producing more than 25 litres of liquid culture of GMOs in each vessel; or
- (e) any other work prohibited in writing by the Regulator.

General conditions

11. If the certification holder is not the owner of the facility, fittings and/or containment equipment and does not have the authority to maintain the facility, fittings and/or containment equipment, the certification holder must notify the Regulator in writing if the owner of the facility, fittings and/or containment equipment is incapable of carrying out, or refuses to carry out, or otherwise does not carry out, any maintenance required in order for the certification holder to continue to comply with the conditions of certification.
12. The facility must be inspected at least once every 12 months by a person who has acquired through training, qualifications or experience, or a combination of these, the knowledge and skills enabling that person to assess the facility's compliance with the conditions listed under the 'General conditions' and 'Facility and fittings conditions'. An inspection report which records the extent of compliance with those conditions must be made. A copy of the last three years' inspection reports must be kept and made available to the Regulator if requested.

NOTE: A checklist which may be used for annual inspections of PC2 Laboratories is available on the OGTR web site <www.ogtr.gov.au> but its use is not mandatory. Annual inspection reports should not be sent to the Regulator unless requested.

13. Each access door to the facility must be labelled with the following signs:
 - (a) a current PC2 sign, as supplied by the OGTR; and
 - (b) a biohazard symbol, if any dealings being undertaken in the facility involve GM micro-organisms, including viral vectors where the parent organism satisfies the criteria for classification as a Risk Group 2 organism under AS/NZS 2243.3.

The signs must be placed on or next to each access door (except for emergency exits) to the facility so that persons entering the facility are able to clearly see they are entering a certified PC2 facility.

Signs may be attached onto removable fixtures, such as backing boards or plastic frames, which must be secured to the door or wall and must not be transferred to any other location.

14. A supply of decontamination agents effective against the GMOs being dealt with in the facility must be available in the facility for decontamination purposes. All containers of decontamination agents, including any solutions for decontaminating hands, must be labelled with the contents and the expiry date (if applicable). Decontamination agents must not be used after the expiry date.

15. A strategy to control pests in the facility must be implemented and maintained.

Facility and fittings conditions

16. The certification holder must ensure that the physical attributes of the facility and fittings are maintained so that the 'Facility and fittings requirements' listed in Part A of this document continue to be met.
17. Prior to any structural changes that will affect the containment of GMOs in the facility, the applicant must either:
 - 17.1. request a suspension of the certification, in writing, from the Regulator;
or
 - 17.2. request a variation to the area of certification in writing, from the Regulator, to allow dealings to continue in a part of the facility unaffected by the structural changes.
NOTE: For example, it may be possible to apply for a variation to temporarily partition the facility to provide containment for GMOs at one end while the other end is being modified. Once the work is complete another variation would be applied for to re-instate any area removed from the certification.
18. Before a suspension of the certification can be lifted, the facility must be inspected by a person who has acquired through training, qualifications or experience, or a combination of these, the knowledge and skills enabling that person to assess the facility's compliance with the conditions listed under 'General conditions' and 'Facility and fittings conditions' to ensure that the facility meets the conditions of certification. Dealings with GMOs must not recommence in a facility which has its certification suspended until the Regulator has lifted the suspension by notice in writing. Storage of GMOs in a suspended facility must be in accordance with the requirements listed in the Regulator's *Guidelines for the Transport, Storage and Disposal of GMOs* as in force from time to time.
19. Where any Class I or Class II biological safety cabinet is installed and used for procedures with GMOs, it must be inspected and tested in accordance with the performance requirements of Section 5.2 *Critical for cabinet function* of AS 2252.1:2010 and of Section 5.2 *Critical performance tests for cabinet function* of AS 2252.2:2010, respectively. This testing is required at least every 12 months and additionally after relocation of a cabinet, after mechanical or electrical maintenance and after high efficiency particulate air (HEPA) filters are replaced. The inspection and testing of cabinets must be carried out by a qualified person.
20. The certificate summarising the test results and the date of the next test, must be affixed to the cabinet.
21. Where testing has shown that the performance requirements for inward air velocity or HEPA filter integrity (Class I), or air barrier containment or exhaust HEPA filter integrity (Class II) are not met and the defect has not been corrected,

the cabinet must be clearly marked to show that it is defective and must not be used for procedures that produce aerosols containing GMOs.

22. Where the certification holder is the owner, or the entity with control of, any autoclave, or any other heat-based equipment used in decontaminating GMOs, that autoclave or other heat-based equipment must be:

- (a) monitored monthly, for effectiveness, and

- (b) calibrated annually,

and the results of the monitoring and calibration must be documented, in accordance with Decontamination Methods specified in the Regulator's *Guidelines for the Transport, Storage and Disposal of GMOs* as in force from time to time.

NOTE: Details on periodical monitoring and annual calibration of decontamination equipment are specified in the Regulator's *Guidelines for the Transport, Storage and Disposal of GMOs* as in force from time to time.

23. Where the certification holder is the owner, or the entity with control of, any autoclave, or other heat-based equipment to be used for the decontamination of GMOs, the certification holder must ensure that a person intending to use that autoclave or other heat-based equipment is able to ascertain whether that autoclave or heat-based equipment has been monitored for effectiveness, calibrated and otherwise maintained in the manner required by the Decontamination Methods contained in the Regulator's *Guidelines for the Transport, Storage and Disposal of GMOs* as in force from time to time.

NOTE: Compliance with the above condition may be achieved by placing a notice on the autoclave, or other heat-based equipment, containing dates and results of calibration and monitoring. Details on periodical monitoring and annual calibration of decontamination equipment are specified in the Regulator's *Guidelines for the Transport, Storage and Disposal of GMOs* as in force from time to time.

24. If any decontamination equipment is found to be defective and the defect has not been corrected, the equipment must be clearly marked to show that it is defective and must not be used for decontaminating GMOs, waste or equipment associated with dealings with GMOs until the defect has been corrected. Defective decontamination equipment must be decontaminated prior to maintenance or repair.
25. Any backflow prevention measures in place either at the time of certification or installed at a later time must be maintained until a change in the measures is indicated by a review of the backflow prevention assessment.
26. Where the facility does not comply with AS/NZS 2243.3 in relation to backflow prevention requirements for water supplied to the facility, and no backflow prevention assessment has been conducted previously, an assessment must be undertaken to determine whether backflow prevention on the water supplied to the facility is necessary considering the GMOs that are being dealt with in the facility.

27. Where there is an existing assessment on the need for backflow prevention, it must be reviewed when:
 - 27.1. any new cross-connection, device or system that may cause contamination of a water supply is connected directly or indirectly to any part of the water service to the facility; or
 - 27.2. connections were made prior to certification and were assessed as not requiring backflow prevention measures, but a new GMO is to be dealt with in the facility that presents different risks from the GMOs assessed at the time of certification.
28. If it is determined, by review, that backflow prevention is necessary, then backflow prevention measures, appropriate for the risks posed by the GMOs proposed to be dealt with in the facility, must be implemented.

NOTE: AS/NZS 3500.1 specifies the requirements and methods for the prevention of contamination of potable water within the water service and the water main, and provides for the selection and installation of backflow prevention devices.
29. The current backflow prevention risk assessment and, if required, details of the backflow prevention measures implemented, must be kept and made available to the Regulator if requested.
30. If the water supplied to the facility is fitted with any testable water supply backflow prevention devices, these devices must pass a test every 12 months. These tests must be conducted in accordance with AS 2845.3 by a licensed plumber accredited to test backflow prevention devices. Any failures must be rectified and the device re-tested until compliance is achieved. Documentation of the last three years' test results must be kept and made available to the Regulator if requested.
31. If the backflow prevention device is found to be defective and the defect has not been corrected, any equipment attached to the water supply must be clearly marked to show that it must not be used when attached to the water supply system until the defect has been corrected.

Part C

Behavioural Requirements

Physical Containment Level 2 Laboratory Version 3.2 – Effective 1 March 2013

1. Persons undertaking dealings in the facility with GMOs requiring PC2 containment must comply with these Behavioural Requirements.

Non-GMOs, exempt dealings and PC1 dealings in the facility

2. Persons undertaking work in the facility on non-GMOs, exempt dealings or dealings which may be undertaken in a PC1 facility must comply with these Behavioural Requirements unless:
 - (a) procedures are implemented to ensure that non-GMOs, exempt dealings or dealings which may be undertaken in a PC1 facility, are not cross-contaminated with GMO dealings requiring containment in a PC2 facility;
 - (b) the above procedures are documented; and
 - (c) the primary and any secondary container used to transport any organism out of the facility must be free of contamination with GMOs prior to being transported out of the facility.

Dealings which may be undertaken in a PC1 facility, and where subclauses (a) to (c) above are met, may be conducted in accordance with the Behavioural Requirements in this document or the *Guidelines for Certification of a Physical Containment Level 1 Facility*.

NOTE: Means of preventing cross-contamination could include physical separation of the work, or separation by working at different times and ensuring any contaminated surfaces are decontaminated prior to working with a different organism.

Doors & windows

3. Except during the entry and exit of personnel, supplies and/or equipment, doors of the facility must be closed while procedures with GMOs are being conducted. Entrance doors into the facility must remain locked, or the facility must be otherwise secured, when facility personnel are not in attendance.
4. Dedicated “Emergency Only” exits must not be used to enter nor exit the facility except in an emergency.
5. Windows must remain closed and locked, or otherwise secured, while procedures with GMOs are being conducted or when facility personnel are not in attendance.

Containment equipment

6. If any proposed dealings in the facility with GM micro-organisms will produce aerosols containing Risk Group 2 GM micro-organisms, then these dealings must

be performed in either a biological safety cabinet or other equipment specifically approved in writing by the Regulator that is designed to contain aerosols.

NOTE: Procedures with GM micro-organisms such as centrifuging and vortexing in sealed tubes does not need to be performed in a biological safety cabinet, provided that the tubes are only opened in a biological safety cabinet.

7. Where any Class I or Class II biological safety cabinet is installed and used for procedures with GMOs, it must be used and decontaminated in accordance with the requirements of AS 2252.4.

Personal protective equipment

8. The following personal protective equipment must be worn by personnel undertaking dealings in the facility:
 - (a) protective clothing to afford protection to the arms and front part of the body; and
NOTE: A rear-fastening gown is preferable.
 - (b) disposable gloves, when dealing with GM viral vectors or GMOs which fit into the classification of Risk Group 2 organisms, as described in AS/NZS 2243.3.
NOTE: Consideration should be given to the wearing of appropriate forms of eye protection.
9. Personal protection equipment, with the exception of gloves, may be worn if moving directly to another containment facility, certified to at least PC2 by the Regulator, that is directly connected to the facility or is connected by a corridor, stairs or other space that is not a public thoroughfare and in which there is negligible risk of the release of the GMOs or of cross-contamination should other personnel be encountered or contacted in the corridor.

Decontamination

10. Decontamination must be undertaken in accordance with Section 3.1 of the Regulator's *Guidelines for the Transport, Storage and Disposal of GMOs* as in force from time to time unless otherwise approved in writing by the Regulator.
11. All decontamination procedures conducted inside the facility must be carried out by trained personnel.
12. GMOs, non-GMOs containing GMOs, or any wastes containing GMOs must be decontaminated prior to disposal if the method of disposal is not also the method of decontamination.
13. Work benches and surfaces where procedures involving GMOs have taken place must be decontaminated when the dealings are completed. Equipment directly used in procedures involving GMOs and equipment suspected to be contaminated must be decontaminated when the dealings are completed.

14. Equipment contaminated with or suspected to be contaminated with GMOs must be decontaminated before being removed from the facility, except if the equipment is being transported for the purposes of decontamination in accordance with the Regulator's *Guidelines for the Transport, Storage and Disposal of GMOs*, as in force from time to time, and other relevant guidelines issued by the Regulator.
15. Personal protective equipment contaminated with or suspected to be contaminated with GMOs must be taken off as soon as practicable and decontaminated prior to reuse or disposal. Protective clothing that is known to be free of GMOs may be washed using normal laundry methods. Gloves must be disposed of after use and prior to exiting the facility.
16. Persons who have been performing procedures in the facility that involve GM micro-organisms, or who have had hand contact with GMOs that could persist on the hands after exit from the facility, must decontaminate their hands before leaving the facility.

NOTE: This may include the use of soap and water, if appropriate. If wash-basins are to be used, the use of hand operated taps is not acceptable, as they are a ready source of contamination. Soap and other decontamination agents should be dispensed from hands free dispensers.

Spills of GMOs

17. Documented procedures must be in place to decontaminate any spills involving GMOs inside the facility. The procedures must be made available to the Regulator if requested.
18. If a spill of GMOs or any material containing GMOs occurs inside the facility, the spills procedures must be implemented to decontaminate the spill as soon as reasonably practicable.
19. In the event of the escape, unintentional release, spill, leak, or loss of GMOs outside of the facility:
 - (a) efforts must be implemented as soon as reasonably practicable to locate and/or retrieve the GMOs and return the GMOs to containment or render them non-viable; and
 - (b) the incident must be reported to the Regulator as soon as practicable.
20. Any decontamination of GMOs must be in accordance with the requirements listed in the Regulator's *Guidelines for the Transport, Storage and Disposal of GMOs* as in force from time to time.

Labelling

21. All containers of GMOs must be clearly labelled so as to indicate that they contain GMOs. Any unlabelled material must be treated as a GMO and handled in accordance with these requirements.

NOTE: Labelling enables the separation of GM work from non-GM work and enhances the control of GMOs within the facility.

Removal and storage of GMOs

22. Transport and storage of all GMOs outside of the facility must be conducted in accordance with the Regulator's *Guidelines for the Transport, Storage and Disposal of GMOs*, as in force from time to time, and other relevant guidelines issued by the Regulator.
23. All cultures of GMOs being stored inside the facility must be sealed during storage to prevent dissemination of the GMOs.

NOTE: The type of container necessary to prevent the GMOs from escaping will vary depending on the type of organisms being stored.

Attachment 1

Standards referenced in this document

'AS' followed by a number or other identification is a reference to the Australian Standard so numbered or identified.

'AS/NZS' followed by a number or other identification is a reference to the Australian/New Zealand Standard so numbered or identified.

Refer to the most recent issue of the standards.

AS/NZS 2243.3	Safety in laboratories Part 3: Microbiological safety and containment
AS 2252.1	Biological safety cabinets Part 1: Biological safety cabinets (Class I) for personnel and environment protection
AS 2252.2	Controlled environments Part 2: Biological safety cabinets Class II - Design
AS 2252.4	Controlled environments Part 4: Biological safety cabinets Classes I and II – Installation and use (BS 5726:2005, MOD)
AS 2845.3	Water supply - Backflow prevention devices Part 3: Field testing and maintenance of testable devices
AS/NZS 3500.1	Plumbing and drainage Part 1: Water services

6.7 Unintentional Release of Genetically Modified Organisms

If GMO's are un-intentionally released from the facility, the Microbiology Safety Officer should be notified immediately. The safety officer will take whatever immediate action is possible and appropriate and then notify both the IBC and the OGTR.

7. PERSONAL PROTECTIVE EQUIPMENT & PROCEDURES

Ideally, this section (or an abridged version) should be incorporated (along with Section 4) into all students laboratory practical manuals.

7.1 Gowns

- Students and staff are provided with rear opening wrap around gowns for use when in the laboratory.
- Front buttoning laboratory coats are not suitable.
- Gowns are to be laundered every fortnight during semester.
- Any gowns that are soiled in excess of “normal use” are to be removed from circulation until laundering can be arranged.
- Staff are to ensure that students wear gowns at all times in the laboratory, do not wear them out of the laboratory, and replace them “inside out” onto the hooks at the completion of laboratory sessions.

7.2 Safety Glasses and Eye Protection

- All students and staff are required to have “safety glasses” with them for all practical sessions, and are to use them when procedures are undertaken that involve significant risk of splashing with infectious or corrosive liquids.
- Safety glasses must be worn when opening the autoclave.
- Safety glasses must be worn when accessing the liquid nitrogen storage system.
- An eyewash station is located in the “ante room”.
- The eyewash fluid should be replaced with “fresh” sterile distilled water every month. The date of “renewal” shall be recorded on the bottle.

7.3 Gloves

- For routine work in the microbiology laboratory, gloves are not considered essential.
- Gloves should be worn under the following circumstances;

- When mopping up a spill.
- When performing procedures where there is a high risk of contaminating hands.
- If open cuts or skin conditions are present that increase the risk of infection from accidental contamination.
- When instructed by the demonstrator.
- Ensure that adequate supplies of gloves are present in all laboratories. If you use the last gloves from a box, please notify the demonstrator so that stocks can be replenished.
- Gloves MUST be worn when working in the biological safety cabinet.

7.4 Handwashing

- The standard handwashing procedure is to use running water and “Hibiclens”.
- Hands must always be washed before leaving the laboratory.
- Hands must be washed following any type of spill (culture or reagent).
- The “Hibiclens” dispensers at all handwashing sinks within the laboratory must always be sufficiently full.

7.5 High Risk Individuals /Antenatal Considerations

- Persons who are immunocompromised or otherwise particularly susceptible to infection need to be identified so that additional precautions for microbiological safety can be taken when necessary.
- Within this context, pregnant women are known to be at high risk of infection by *Listeria monocytogenes*. Therefore, for their own safety, any female student or staff member who is, or thinks that they may be pregnant, should discuss the matter with the academic in charge of the unit prior to commencing work with *Listeria monocytogenes*.
- Any student that has a medical condition that they feel might be compromised by exposure to reagents or cultures in the laboratory is encouraged to discuss the matter with the demonstrator or Microbiology Safety Officer.

8. ORGANISMS

8.1 Risk Category

- All organisms used in the laboratories are to be regarded as potential human pathogens and treated accordingly.
- Only organisms categorised as Risk Group 1 or 2 (see appendix 2) are allowed in the laboratory, and organisms of Risk Group 2 that require additional special precautions may only be used when authorised by the Microbiology Safety Officer.
- It should be noted that *Mycobacterium tuberculosis* or specimens likely to contain *Mycobacterium tuberculosis* are not allowed in the laboratory.
- It should be noted that cultures of *Neisseria meningitidis* should not be knowingly cultured in the laboratory.

8.2 Storage and Identification

- All cultures should be suitably identified such that the degree of risk can be ascertained in the event of an accident.
- For “unknown” cultures used for teaching purposes, at least two people (usually the practical demonstrator and the Laboratory Technician) shall be aware of the true identity.

8.3 Culture Collections

- Details of all organisms maintained in Microbiology Laboratory Culture Collections should be entered onto the central databases located in the shared files folder on the laboratory computer. These lists will be considered the “definitive” versions and should be “dated” when any amendments or additions are made.
- Some of the organisms within the culture collection are GENETICALLY MODIFIED ORGANISMS and are clearly identified as such on the database by highlighting in yellow, with details of the specific genetic modification contained in the spreadsheet.
- All hard copies must be dated.
- The academics responsible for individual collections shall also keep an up-to-date electronic version.

8.4 Transport

- When viable organisms (eg cultures, specimens, stock organisms) are transported to or from the laboratory, the “primary” container should be carried within an outer “secondary” container. The secondary container should be sealable and non breakable.

8.5 Genetically Modified Organisms (GMO's)

For additional information please see 6.6.

- 1) All cultures or stored GMO's that come under the NLRD category must be clearly labelled with a minimum of a) a yellow sticker b) the initials of the worker responsible for the organisms and c) some identifier, preferably a number linked back to the culture collection.
- 2) All areas where GMO's are or might be stored should also be clearly labelled with adequate signs AND a yellow sticker.

8.6 Unintentional Release of Genetically Modified Organisms

If GMO's are un-intentionally released from the facility, the Microbiology Safety Officer should be notified immediately. The safety officer will take whatever immediate action is possible and appropriate and then notify both the IBC and the OGTR.

9. LABORATORY EQUIPMENT

9.1 Autoclave

- Each autoclave should have a logbook documenting the date, time and contents of the cycle.
- The standard autoclave cycle used in this laboratory is 121°C for 15 minutes; should a faster cycle be required then 134°C for 4 minutes can be used. Such “non standard” cycles should be indicated in the logbook.
- Microbiological waste should be autoclaved for 40 minutes at 121°C.
- A heat sensitive indicator (autoclave tape) should be used in every load.
- A Thermolog (® 3M) strip should be run weekly and a spore strip run every two weeks. Both the thermolog and spore strip should be autoclaved inside a loosely capped Shott bottle. **Any failures MUST be reported to the Microbiology Safety Officer as soon as possible.**
- Details of problems, repairs or maintenance should be recorded in the logbook.
- Noxious fumes may be generated during the autoclaving of waste materials. To minimize the risk of being exposed to these fumes, always turn on the extraction fan before opening the autoclave door and allow the fumes to dissipate before removing the contents.
- Always wear safety glasses when opening the autoclave door and always check that the chamber has de-pressurised before opening.
- Always use heat safety gloves when removing items from the autoclave.
- Undergraduate students are only permitted to use the autoclaves when under the **DIRECT** supervision of a staff member.
- Post graduate students must be given instruction on the use and care of the autoclaves before using them, and as a matter of courtesy check with the laboratory staff before running cycles within normal working hours.

9.2 Biological Safety Cabinet

- The biohazard cabinet is a Class 1 cabinet designed to provide an inward flow of air to protect the operator. The following guidelines should be observed when using the cabinet.
- Close doors to adjoining laboratories to minimise the disruption of the airflow.
- Turn on the motor and allow it to run for 30 seconds before commencing work.
- Wipe down the interior work surfaces of the cabinet with Biogram when work is completed.
- Do not switch on the UV lamp unless precautions are taken to avoid accidental exposure to UV radiation. Either install the shield or leave the room if the UV lamp is required for decontamination.
- The cabinet is checked annually by LAFtechnologies.
- A Microbiology Safety Officer should be notified of any major spills that occur in the biohazard cabinet.
- The UV lamp should be run as a decontaminating measure once per week, and following any spill in the cabinet. This should be recorded in the log book located with the cabinet.
- Gloves MUST be worn when working in the cabinet.
- More information on the use of the cabinet can be obtained from Aus Std 2647.2000 attached as an appendix to this manual.

9.3 Gas Supply

- The laboratory is serviced with a reticulated gas supply and each room has an isolation switch that can be used to cut off the gas to all outlets within that room.
- In the event of a spill of flammable liquid, fire or backburning of an individual bunsen burner, de-activate the isolation switch immediately.
- A master isolation switch - which cuts off the gas supply to the entire laboratory, is located in the ante-room and should be de-activated at the end of each day.

- The gas supply is to remain off until a staff member declares it safe to switch it back on.

10. CLEANING AND WASTE DISPOSAL

10.1 Biogram

- The general disinfectant used in the laboratory is BIOGRAM. This is supplied as a 15% phenol equivalent. It should be prepared as follows.
 - a) 1 in 50 dilution for bench top discard containers.
 - b) 1 in 150 for bench wiping squirt bottles.
 - c) 1 in 20 for gross spills.

10.2 Diversol

- For cleaning of spills involving human blood or body fluids, "Diversol" should be used at a concentration of 5000 ppm of available chlorine. This should be made up immediately prior to use as it has a limited shelf life. Sachets of "Diversol" are stored on the chemicals shelf in the preparation room.

10.3 Squirt Bottles

- Ensure that there are sufficient "biogram squirt bottles" in each laboratory for every laboratory session. These should be clearly labelled.
- These are prepared as a 1 in 150 of commercial biogram.

10.4 Biogram Buckets

- The "biogram buckets" should be changed weekly - or more often if grossly soiled.
- These are prepared as a 1 in 50 of commercial biogram.
- The buckets and contents must be autoclaved prior to removing or disposing of the contents (see 8.7).
- Allow the buckets to cool before emptying the contents (through a sieve) down the drain. Solid materials collected in the sieve can then be bagged and discarded. Note, that since this residual material usually contains glass and other sharp objects, it should be disposed of in the bin for "broken glass".

10.5 Billy Cans

- The “billy cans” should be emptied regularly, and the contents must be autoclaved before removing, disposing, washing or recycling of the contents (see 8.7).

10.6 Biohazard Bags

- The biohazard bags and contents should be autoclaved before disposal. The bags should not be sealed prior to autoclaving, rather they should be left open to allow penetration of the steam (see 8.7)

10.7 Autoclaving Waste Materials

- Noxious fumes may be generated during the autoclaving of waste materials. To minimise the risk of being exposed to these fumes, always turn on the extraction fan before opening the autoclave door and allow the fumes to dissipate before removing the contents.
- Microbiological waste should be autoclaved for 40 mins at 121°C.

11. CLEAN-UP PROCEDURE FOR BIOHAZARD SPILLS

- Spills involving infectious materials are complex events and no set of instructions can cover all possibilities nor replace the need to exercise common sense and apply sound microbiological judgement in their management.
- All staff members or other personnel involved in supervising practicals, and all postgraduate students involved in unsupervised work must be familiar with the following guidelines, which are to be used in the management of spills.

11.1 General considerations for biohazard spills

- When dealing with a spill of biohazardous liquid, it is important to be aware that the spill may become dispersed into three spill fractions:
 - The bulk of the liquid remains as a puddle.
 - A portion separates as splashes and rivulets.
 - A portion is released as airborne particles (aerosols).
- The small airborne particles pose the greatest risk as they can remain airborne and be dispersed to other areas.
- General purpose laboratory disinfectant (Biogram) can be used to clean all spills except those involving human blood or body fluid; in these cases a disinfectant with 5000 ppm of chlorine (Diversol) should be used (see 8.2).

11.2 Assessing a Biohazard Spill

- The designation of biohazard spills into “minor” and “major” is of practical importance as this will dictate the nature and extent of the clean up procedures subsequently instigated. However, establishing and using formal criteria to so designate a given spill is problematic because of the large number of variable circumstances that may relate to the spill.
- The supervising staff member present will be responsible for assessing the risk posed by an individual biohazard spill and instigating suitable clean up procedures.
- In general, the following aspects will need to be considered when assessing and categorising a spill.

- The biological nature of the spill. For example; how pathogenic are the organisms contained or likely to be contained in the spill, and is infection likely to be acquired by the respiratory route ?
 3. The physical nature of the spill. For example; has the spill resulted from a container knocked over on a bench with low potential for the generation of aerosols, or has a container been dropped, or smashed in some way with a greater potential for the generation of aerosols ?
 4. The volume of liquid spilt.
- For example, 10 ml broth culture of *E. coli* that has been knocked over on the bench would be considered a “minor biohazard spill” whereas a 500 ml broth containing *S. pneumoniae* that has been dropped onto the floor would be considered a “major biohazard spill”.

11.3 Minor biohazard spills

Generally considered as a spill of minimally hazardous material with low potential for generation of aerosols.

- If hands have been contaminated, first wash hands with Hibiclens.
- Remove and replace any contaminated protective clothing.
- Put on gloves.
- Lay down absorbent material wetted with disinfectant over the spill and allow to sit for 10 minutes.
- Discontinue working in the immediate area.
- After 10 minutes, mop up spill and place contaminated materials into autoclave bag.
- Wipe over general area again with paper towel dampened with disinfectant.
- Remove gloves and wash hands.
- Consider the events that lead to the spill and determine if any additional preventative strategies are appropriate. Discuss these with a Microbiology Safety Officer.

11.4 Major biohazard spills

Generally considered to be spills of major risk with larger volume and considerable production of splashes and aerosols.

- Hold breath, warn others of spill and all leave the room immediately.
- Close doors and place a “DO NOT ENTER” sign on the door.
- Remove any contaminated clothing and wash any contaminated body surfaces.
- Notify Microbiology Safety Officer (preferably) or other senior staff member. Assemble a “Spill Clean Up Team” - consisting of three people, two to clean up, and one to supervise and direct the clean up.
- The clean up team should all don “gowns, gloves, face masks and safety glasses” before entering the spill area.
- Do not re-enter the room until a minimum of 30 minutes has elapsed.
- Determine the extent of the spill: pour disinfectant around the edge of the spill and allow it to run “into the spill”. Do not pour disinfectant directly onto the spill as this may create additional aerosols.
- Lay paper towels wetted with disinfectant onto the spill and leave for 30 minutes.
- Use disinfectant to wipe over areas around the spill that are likely to have been contaminated with splashes and aerosols.
- Fill out an incident report form (see appendix 3).

12. REPORTING OF INCIDENTS

12.1 General Considerations

- Official reporting of incidents is to be done through the relevant Employee Safety representative in the School of Health Sciences.
- Copies of any documentation relating to an incident or safety hazard must be sent to both Microbiology Safety Officers and a copy should also be retained within the laboratory.

12.2 Accident or Incident Report

- All accidents and major spills should be documented on an “incident report form” (see appendix 3 for example).
- These forms are available from the Employee Safety representative (see above), and should be completed with the assistance of that officer.
- Copies of the completed form should be sent to both Microbiology Safety Officers, and a copy retained in the microbiology laboratory.

12.3 Notification of a Safety Hazard

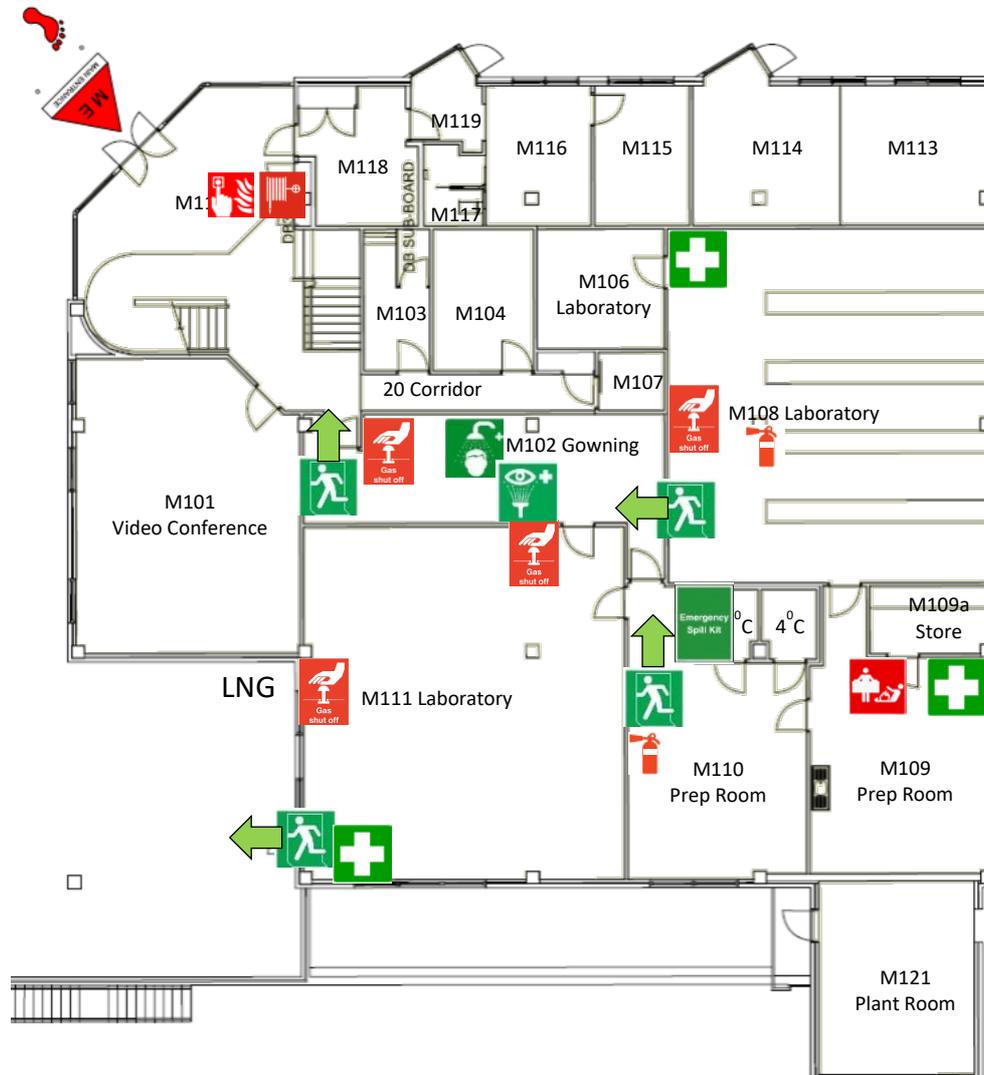
- Staff are encouraged to communicate “near misses” or safety hazards that they have identified to the Microbiology Safety Officer or Employee safety representative of the respective School in order to identify “risky practices” and prevent future incidents.
- If appropriate, a “Notification of a Safety Hazard” form (see appendix 3 for example) should be completed.
- Copies of the completed form should be sent to both Microbiology Safety Officers, and a copy retained in the microbiology laboratory.

12.4 Unintentional Release of Genetically Modified Organisms

If GMO's are un-intentionally released from the facility, the Microbiology Safety Officer should be notified immediately. The safety officer will take whatever immediate action is possible and appropriate and then notify both the IBC and the OGTR.

13. APPENDICES

Floor Plan, Safety and First Aid Equipment Microbiology Labs, Building M



Appendix 1.

Organisms classified as Risk Group 1 and 2.

Appendix 2.

Australian Standard 2647.2000 (Biological Safety Cabinets)

Appendix 3.

Induction Form.