THE UNIVERSITY OF QUEENSLAND
AUSTRALIA
CREATE CHANGE

UQ Gatton

Agricultural Chemical Handling & Storage Facility

Facility Operating Procedures

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1. INTRODUCTION

The aim of this document is to provide information to users of agricultural chemicals at the UQ Gatton Campus. Agricultural chemicals stored and used in the facility are mainly pesticides which includes herbicides, insecticides and fungicides. This information will enable informed decisions regarding safe chemical use, compliance with relevant legislation, Australian and Industry Standards, University of Queensland policies and environmental conservation.

This will be achieved through the *Gatton Campus Agricultural Chemical Handling & Storage Facility Management Committee* comprising representatives from various user groups and other advisers from within the University of Queensland. This committee is responsible for the development and implementation of procedures and work practices relating to the management and safe use of the facility.

The procedures contained within this document are subject to ongoing assessment and review and will be modified accordingly as improvements to existing systems are developed, as facilities or work processes are modified, and as changes to organisational and legislative requirements occur.

Facility annual workplace inspections are conducted by the relevant Work Health Safety Coordinators with corrective actions communicated to the relevant stakeholders. Random inspections or audits may also be undertaken by internal or external auditors

Further information relating to UQ policies are available at the Policies and Procedures Library on the University of Queensland website. In some instances it may also be necessary for users of agricultural chemicals to refer to specific legislation including Acts, Regulations, Advisory Standards, Codes of Practice and Industry and Australian Standards.

UQ Health, Safety and Wellness Policy Statement

PPL 2.10.03

THE UNIVERSITY OF QUEENSLAND AUSTRALIA

Health, Safety and Wellness Policy Statement

The University of Queensland regards the health, safety and wellness of our people as an ethical and moral responsibility. Safety and compliance risk are non-negotiable as the University aspires to zero harm for all staff, students, visitors, controlled entities, contractors and volunteers across all University operations and sites.

UQ encourages innovation and prudent investment in strategies to protect the health, safety and wellness of our people with a focus on the prevention of high risk. We are dedicated to continuous improvement in the prevention of injuries, illness and incidents through an effective health and safety management system and by actively driving a proactive health, safety and wellness culture.

Our health, safety and wellness principles are:

- Health, safety and wellness is a moral and ethical responsibility,
- Management is accountable for driving health, safety and wellness in the workplace,
- It is unacceptable for people to be harmed in the course of their endeavours at UQ,
- Leadership commitment on the health, safety and wellness of our people is expected and essential.

Through its teaching and research, UQ is a prominent contributor to the development of practices and policies that enhance the global environment. It is the intent of UQ to conduct its internal operations in the spirit of this leadership role as we aim to be recognised as a health, safety and wellness leader in the sector. This will be achieved by:

- Emphasising that leaders at all levels must demonstrate, through their actions, their accountability and commitment to the health, safety and wellness of our people.
- Adopting a constructive, proactive approach through the implementation of the UQ Health, Safety and Wellness Strategy 2017-2021.
- Establishing the Health, Safety and Wellness Goals of the University to ensure continual improvement and provide assurance to senior management on our performance.
- Maintaining an occupational health and safety management system in accordance with relevant legislative and self-insurance licence conditions, and provide adequate resources as determined by the nature and scale of the University's workplace activities.
- Ensuring occupational health and safety risk management processes are proportionate, evidence informed and aligned with the risk appetite statement (RAS) approved by the Senate.
- Encouraging people to continually challenge the environment in which they work and empowering them through training and competency to take personal responsibility for their own safety and the safety of others.
- Encouraging open consultation, collaboration and dissemination of safety information and engage with suppliers, contractors and industry partners to raise the standards of safety.
- Recognising positive outcomes and innovation as strong indicators of proactive performance.

Everyone at The University of Queensland is required to fully support and promote this policy by complying with the requirements and duties contained in the OHS management system and the UQ Health, Safety and Wellness Strategy 2017-2021.

We strive for excellence in everything we do, including the health, safety and wellness of our people.
A full text version of the HSW Policy refer to the PPL 2.10.03 Health, Safety and Wellness Policy.

RESPONSIBILITIES FOR OCCUPATIONAL HEALTH AND SAFETY

PPL 2.10.04

1. Purpose and Objectives

The purpose of these procedures is to ensure all University staff comply with their Occupational Health and Safety responsibilities as outlined in relevant legislation and reinforced by the University's Health, Safety and Wellness Policy (PPL 2.10.03a).

Refer to the relevant sections below for responsibilities of university personnel.

- Section 5.1 - Executive Deans and Senior Managers;
- Section 5.2 - Heads of Schools and Organisational units;
- Section 5.3 - Supervisors; and
- Section 5.4 - Individual Staff

WIND TUNNEL RESEARCH FACILITY

The wind tunnel research facility is used to undertake a variety of research projects related to spray technology, in particular the application of pesticides. Hazards within the wind tunnel may include (but not limited to);

- Mechanical – Wind tunnel fan and equipment
- Chemical – A range of pesticides may be used
- Electrical. – A range of electrical equipment may be used.
- Laser – Measurement equipment may involve lasers (potential to cause eye damage)

It is very important that all activities at the facility are undertaken in a safe manner in accordance with University of Queensland policies and guidelines.

A separate induction is required if you are to use any of the wind tunnel facility. Please contact the relevant wind tunnel user to arrange an induction. Contact details are provided in Appendix 2.

2. *SITE PLAN-*
AGRICULTURAL CHEMICAL HANDLING AND STORAGE FACILITY

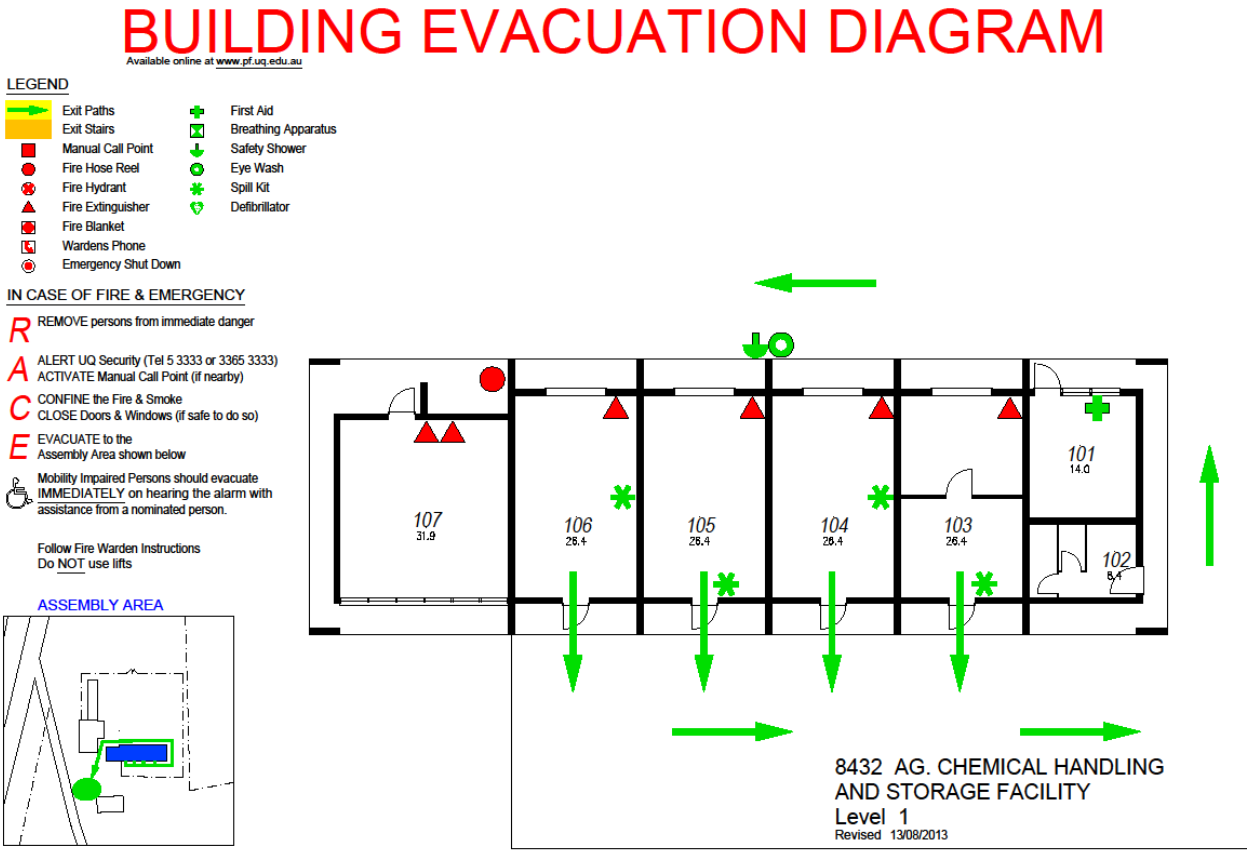


Diagram of Chemical Storage Building including the location of all Emergency Equipment

SITE PLAN- WINDTUNNEL

BUILDING EVACUATION DIAGRAM

Available online at www.pf.uq.edu.au

LEGEND

- Exit Paths
- Exit Stairs
- Break Glass Alarm
- Fire Hose Reel
- Fire Hydrant
- Fire Extinguisher
- Fire Blanket
- Wardens Phone
- Emergency Shut Down
- First Aid
- Breathing Apparatus
- Safety Shower
- Eye Wash
- Spill Kit
- Defibrillator

IN CASE OF FIRE & EMERGENCY

R REMOVE persons from immediate danger

A ALERT UQ Security (Tel 5 3333 or 3365 3333)
ACTIVATE Manual Call Point (if nearby)

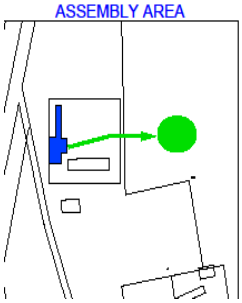
C CONFINE the Fire & Smoke
CLOSE Doors & Windows (if safe to do so)

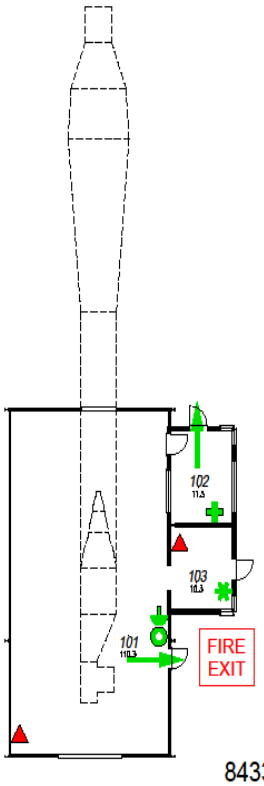
E EVACUATE to the
Assembly Area shown below

Mobility Impaired Persons should evacuate IMMEDIATELY on hearing the alarm with assistance from a nominated person.

Follow Fire Warden Instructions
Do NOT use lifts

ASSEMBLY AREA





8433 WIND TUNNEL RES. FACILITY
Level 1
Revised 13/08/2013

Diagram of Wind Tunnel Facility including the location of all emergency equipment

3. EMERGENCY PROCEDURES

a. Emergency Phone Numbers

In case of an emergency call UQ Security immediately. All emergencies will require investigation as soon as possible. Contact the HSW Division at St Lucia on 33652365 or the ODGC Safety Officer on 50144 or 0407927092.

In addition to calling UQ Security via telephone/mobile, there is also the **UQ SafeZone App**. UQ SafeZone is an easy-to-use, location-based application for mobile devices that connects staff and students directly with UQ security officers or emergency services during any type of first aid or emergency situation on UQ campuses and sites, providing the user has mobile phone or wifi coverage.

Other important numbers that may need to be called are listed below.

	Internal Number	External/Mobile Number
UQ Security EMERGENCY	53333	3365 3333
Police, Fire, Ambulance	000	
UQ Health Care (Mon – Fri)	50396	54601396
Poisons Information Centre	131126 (24 hours, 7 days)	
Facility Contact	50421	0437 974 583
Accident Investigation - HSW Division		33652365
ODGC Health & Safety Officer	50144	0407 927 092
SAFS Health & Safety Officer	50281	0428 103 731

b. Fire and Emergency Evacuation Procedures

Before a Fire or Emergency:

All occupants and regular users should make themselves familiar with the Emergency Evacuation Procedures for the complex including the emergency phone numbers, the locations of fire exits and the operation of fire extinguishing and other emergency equipment. All Occupants will have completed the University of Queensland online Annual Fire Safety Training.

As security of the compound and stores is an essential requirement, effected by padlocks on all compound gates, egress from the facility may be compromised if an emergency occurs. A second gateway (point of egress) should be unlocked upon entry, particularly where a group of persons e.g. visiting group or class is present, to enable egress.

In the case of Fire or Emergency.

If you discover a fire or emergency:
Phone Security 53333 giving:

- details of location (specify Gatton Campus), type and scale of the emergency, and
- the name and location of the caller.

Alert all other people within the complex of the fire or emergency, and commence evacuation of personnel from the complex. Any person in charge of a class, seminar or other group should instruct all occupants to proceed quietly and quickly to the nearest exit.

Do not attempt to extinguish a fire if the fire is large, is producing toxic fumes from burning chemicals or if you have not been trained in the use of the fire extinguishing equipment. When all students and visitors have left the room/s, the person in charge should leave and close any doors to prevent the spread of fire and smoke. During evacuation walk quietly but quickly to the nearest exit and proceed to an assembly point outside the complex to await further instructions. Do not run, push, or overtake.

For the purpose of evacuation, people should be considered disabled if they are unable to evacuate the building without assistance, or if the time needed for them to exit the building would normally be much greater than the average evacuee. Arrangements should be made for a person to be assigned to assist disabled persons in an emergency.

Emergency Assembly Point

The car park located on the south side of the wind tunnel is the primary designated assembly area.
Choose a suitable assembly area after assessing the direction of the wind and move to an open area that is upwind of the fire. This avoids the possibility of exposure to toxic fumes from burning chemicals. Stay a safe distance from the roadway and avoid long, dry grassed areas often found in the vicinity of this facility.

The first choice for an assembly area is on the bitumen surface between this facility and the sewerage treatment plant to the north of the facility. This will not impede emergency services.

Check that all persons are present at the assembly area and if any persons are not present report this fact to a person in charge of the evacuation.

Arrival of Fire or Emergency Services

- Advise the fire or emergency services on the state of evacuation from the complex on their arrival.
- Chemical manifests of the areas involved in the emergency should be provided to advise the emergency services of the substances involved with the emergency. Manifests of these substances will be provided to Emergency Services by UQ Security.
- Ensure all evacuees remain at a safe distance from the emergency and do not hinder the emergency services in performing their duties.
- Do not return to the complex until the 'all clear' is given by UQ Security or the Fire and Emergency Services.

c. Chemical Spills

Major spills occurring within the dedicated storage bays would not normally extend beyond the bunds and the containment system incorporated into the design and structure of the storage facility.

Minor spills may be controlled by spills kits located in each of the storage bays. These kits should be clearly marked and must be located as close as possible to an entrance for ease of access particularly in the event of a spill. The kits should contain a suitable absorbent for the chemical, a brush and pan, and a suitable container to accept the material being collected. Personnel should be instructed in the safe use of spills kits as part of their induction to the facility.

As a spill of chemical concentrate may present a significant risk of exposure an assessment of the risk involved in cleaning up the material should be performed and appropriate controls applied. If the controls determine that PPE is required a full set of appropriate PPE should be stored and maintained in such a manner and location as to be readily accessible and to prevent the PPE from becoming contaminated during normal storage particularly in the event of a spill.

All spills should be reported on the University's UQSafe -Incident Database and be directed through the facility overseer for assessment and revision of procedures for prevention of recurrence.

There is an emergency safety shower and eye wash station located in between Bay 104 and 105.

- Chemical Splashes to the eye - Flood the eye for at least 20 minutes using the emergency eye wash station.
- Chemical splashes to the skin - Flood the entire area for at least 20 minutes, including clothing, under the emergency shower provided.

4. ACCESS TO FACILITY

Persons entering to use the complex shall be appropriately qualified (e.g. ACDC licence, Chem-Cert or chemical units of competency (AQF level 3 or higher)), be a member of the management committee responsible for the complex or be directly supervised or authorised by one of the above.

The appropriately qualified person or committee member must also be an employee of the University of Queensland or be an employee of an organisation authorised by the University.

Anyone entering the complex shall be inducted to all safety precautions and emergency procedures. This induction process shall be documented and a record kept. If persons have not been inducted to these precautions or procedures they must not enter the complex unless accompanied by an appropriate person.

Contractors and other persons intending to perform work within this complex should ensure that their work plans are submitted to Property and Facilities and are also submitted to the management committee prior to the commencement of any work. This will enable the management committee to identify foreseeable hazards relating to the proposed work and enable the provision of relevant information to these persons.

5. *ACCESS TO STORAGE BAYS*

Persons intending to access substances from the storage bays shall meet all of the above requirements, have completed chemical risk assessment training and be employed within the unit that has general access to the particular storage bay for which access is required, or have been given direct authority from such a person. If the precautions and procedures above are not met such persons must not be allowed to enter the storage bays unaccompanied.

KEY ISSUE

Keys are issued by the Office of the Director, Gatton Campus. Keys will be issued as requested upon meeting the following conditions.

1. the University of Queensland online induction is completed
2. the applicant agrees to the criteria at point 4. "ACCESS to FACILITY" and if required point 5 "ACCESS TO STORAGE BAYS" of this induction.
3. the facility SOP & Induction declaration is completed, signed and submitted.
4. complete the key register form obtained from the Office of the Director, Gatton Campus.

6. *CHEMICAL RISK MANAGEMENT*

Before using any chemical product a chemical risk assessment must be undertaken to determine the possible hazards of the product and the control measures required for its safe use.
Within the University of Queensland, chemical risk assessments are required for-

- All new processes (research projects, teaching exercises or other applications involving hazardous chemicals) will be subject to risk assessment prior to or at commencement of the process.
- Hazardous chemicals already in use will be subject to the undertaking of a chemical risk assessment.

The risk management approach involves:

(a) ***Identifying*** the chemical hazards that pose a risk in the workplace;
(b) ***Assessing*** the degree of risk created by the chemical, environment and related work processes;
(c) ***Determining*** and *i****mplementing*** appropriate ***control*** *measures*; and
(d) ***Recording*** any action or work procedure established for the workplace.

Chemical risk assessments should be conducted in the UQSafe-Risk Database, the University's preferred system for assessing and recording risk.
The University Risk Assessment database is located at
http://www.uq.edu.au/ohs/index.html?page=29960

Review of an Assessment
Risk assessment should not be considered as a once only event. It should be an on-going process using new information that considers any relevant changes in the workplace task to re-assess the effectiveness of control measures. Risk assessments are reviewed according to the level of risk as listed below:
Low Risk (Green) are reviewed once every **5 years**
Medium Risk (Yellow) reviewed **annually**
High Risk (Amber) reviewed once every **6 months**
Extreme Risk (Red) reviewed within **2 days**

Risk assessments are also reviewed when:

- Work practices change
- A new chemical is introduced
- An updated SDS is produced by the supplier
- Need is indicated by adverse results of health monitoring

Persons using chemicals should have completed their own assessment or viewed a relevant assessment approved by their Supervisor.

7. SAFETY DATA SHEETS

An SDS is the key tool for a chemical *risk assessment* as it includes detailed hazard information.
Persons responsible for purchasing chemicals should specifically request an SDS when ordering.

Within the University of Queensland SDS information on most chemicals used is available through *Chemwatch*. The Chemwatch database is available on the UQ Health, Safety and Wellness website.

Suppliers of the substance have an obligation to provide a copy of the manufacturer's SDS with the sale of a product or when requested by the purchaser.

Sufficient information should be provided by whatever source to conduct a risk assessment, select the necessary safety equipment and to develop procedures for safe use.

A SDS for a substance should provide:-

- Identification information
- Specific chemical properties
- Health hazard information
- Precautions for use
- Safe handling information
- First aid and medical information

Within the agricultural chemical handling and storage facility -

- any person who obtains chemicals for University of Queensland, or other tenant's, use shall ensure a copy of the relevant SDS is available for the product.
- an SDS for each product shall be stored in each storage bay (electronic versions are acceptable if available). These should be periodically reviewed to ensure currency and be readily available at the point of chemical access or use.
- an SDS shall be read before handling any new product and when conducting a chemical risk assessment.
- all safety warnings contained in an SDS shall be heeded and appropriate precautions taken.

8. PERSONAL PROTECTIVE EQUIPMENT

The level of personal protection required (PPE) for a worker will depend on the nature of the hazards that they are working with or which they may encounter whilst performing their work tasks. Selecting appropriate PPE is determined during conduct of the risk assessment for the specific work activity.

PPE includes respiratory protective equipment, protective clothing and footwear, gloves, ear, eye, and face protection. It is essential that the PPE provide adequate protection from the particular hazard at the likely level of exposure and for the full duration of the exposure. PPE should always be of the correct size and fit for the wearer.

Conduct of the risk assessment should identify the hazards presented by a chemical during its intended use. Information contained on the label or in the SDS will describe the most likely route of entry into the body and the most appropriate controls to prevent or minimise this entry and subsequent exposure. Selection of the most suitable PPE should be accompanied with a system for ensuring appropriate, purchasing, servicing, maintenance, storage and use of personal protective equipment.

Training in the selection and use of personal protective equipment is required for all users of agricultural chemicals. This training may be included in agricultural chemical accreditation courses where relevant practical application and information is provided. Training in the selection and use of personal protective equipment is also available through the Health, Safety and Wellness Division.

9. STORAGE AND HANDLING OF CHEMICALS

One of the most effective methods of reducing the risk arising from stored chemicals is to keep the quantities to a minimum.

- Flammable and combustible liquids should not be stored on the floor. Where the quantities stored exceed the minor quantities limits, flammable and combustible liquids must be stored in an approved flammable liquids cabinet or in one of the dedicated storage bays of the complex.

- Schedule 7 pesticides have restricted availability, but may be purchased by primary producers, horticulturists and licensed pest controllers for use according to their registered purpose.

- Regulated drugs and poisons must be locked in a cupboard, drawer, storeroom or other place to which the public does not have access.

- Incompatible classes of dangerous goods (or incompatible chemicals within a class) must be segregated by distance, fire-rated walls or contained within an appropriate chemical storage cabinet to prevent:
  - hazardous interaction between chemicals (e.g. flammable liquids and oxidising agents, acids and alkalis, cyanide salts and acids); or
  - risk of a fire leading to hazardous involvement of adjacent materials (e.g. spontaneously combustible goods adjacent to flammable liquids or poisons)

In order to minimise the risk of exposing workers and to minimise wastage of stock it is essential to:

- undertake regular checks of chemical containers to determine that they are properly sealed (where appropriate), the container is not damaged and a legible label is attached to the container;
- keep containers out of direct sunlight and exposure to rain where UV light or water can cause degradation of the container or harmful reaction with the chemicals.

Where chemicals are stacked they should only be stacked to such a height which ensures that containers do not break if they fall, and that the crushing strength of containers is not exceeded.

10. HEALTH MONITORING

Health monitoring is a legislative requirement for persons using, or intending to use, hazardous chemicals detailed in Schedule 14 of the Work Health and Safety Regulation 2011. The schedule contains the following substances-

1. Acrylonitrile
2. Arsenic (inorganic)
3. Benzene
4. Cadmium
5. Chromium (inorganic)
6. Creosote
7. Crystalline silica
8. Isocyanates
9. Mercury (inorganic)
10. 4.4Methylene bis (2-chloroaniline) (MOCA)
11. Organophosphate pesticides
12. Pentachlorophenol (PCP)
13. Polycyclic aromatic hydrocarbons (PAH)
14. Thallium
15. Vinyl chloride

Where intended use of the above substances exists, baseline measures of relevant personnel may be required prior to any possible exposure. This is particularly relevant for personnel intending to use organophosphate pesticides where baseline cholinesterase activity needs to be determined. Chemical risk assessments must be performed or consulted prior to use and will assist in determining the level of health monitoring required.

The University Health Service and the Health, Safety and Wellness Division are able to provide this service and should be contacted for assistance in advance of hazardous chemical use where health monitoring is required.

11. MANUAL TASKS

Where containers are kept on shelves in work areas, the shelves should be no higher than shoulder-height to avoid the dangers of stretching to retrieve chemicals. Shelves should be wider than the containers to be stored on them, but the practice of storing chemicals several rows deep on shelves should also be avoided. Larger and heavier containers should be kept at about waist height to avoid the need for difficult bending or lifting to retrieve them, or the increased risk of falling if placed on high-level shelves.

Current Work Health and Safety legislation requires the performance of a risk assessment as detailed in the Hazardous Manual Tasks Code of Practice 2011. Revised purchasing, positioning of stock on shelves or other considerations should be implemented to reduce the risk of injury associated with manual movement of heavy objects.

For example, where 20 litre containers of chemicals, or larger, are used their handles should be used in conjunction with support from the other hand located underneath the container. This enables the container to be carried as close to the body as possible. Check the integrity of the container and ensure the lid is firmly secured and that any chemical residues are absent from the container, particularly in the area of the handles. Chemical residues found on the container may contaminate the clothing or the skin of the person carrying the container.

The assessment should also consider the path upon which the person carrying the container will travel, what obstacles or trip hazards may be encountered on the way and the condition of the walking surface to be negotiated. Check the condition of the floor to determine if it is wet or covered with sand, grit or other substances that may cause the floor to be slippery. Doors fitted with door closers may present difficulties when carrying heavy loads without assistance and should be considered when assessing this risk.

Where this task is performed on a regular basis the use of a suitable trolley will minimise the risk of injury from carrying heavy containers. Also consider the fitting of a tap to the container or a decanting pump that further reduces the need for lifting the container when decanting or mixing and also reduces a spill risk.

12. HYGIENE

In order to minimise contamination of workers from chemicals:

- hands should be washed before eating, drinking, smoking and at the end of the shift;
- work clothes and clothes worn to and from work should be kept apart if there is a risk of contamination with harmful chemicals.
- laundering issues – Such clothing is to be washed in a separate load to daily laundry to prevent contamination of domestic items of other persons.

Disposal and wash up of personal protective equipment should be performed in such a manner that prevents exposure to chemical residues often found on this equipment. Reusable personal protective equipment, such as respirators, should be cleaned immediately and stored in a suitable dust free, cool and dry location that is separate from the chemical storage area. Items of personal protective equipment should not be stored in a chemical storage cabinet, cupboard or airspace that is used for chemicals storage as contamination of the equipment may occur.

Housekeeping standards for the chemical storage areas shall be maintained at a high level, in particular keeping areas free of combustible materials and promptly cleaning up any spilled materials. Personnel responsible for each of the storage bays should ensure that a suitably equipped Spills Kit is maintained within each bay and that personnel are trained in the effective use of the kits.

Empty containers and packaging should be removed from the storage areas and not allowed to accumulate in areas that may cause unnecessary trip hazards, fire risk or environments for encouraging vermin. Birds and other wildlife within the storage area may compromise the integrity of chemical containers by dislodging them from the shelves or attempting to access the contents. This activity is to be monitored and if deemed necessary controls should be put into place to prevent this activity.

13. MANIFEST OF CHEMICALS

An accurate manifest (mandatory) of the chemical substances stored within each storage bay is required to ensure accurate calculation and display of HAZCHEM codes and to satisfy legislative and University of Queensland requirements.

The manifest for each storage bay must be maintained in Chemwatch. Access to the manifests on Chemwatch can be organized through the Health and Safety Officers.

14. CHEMICAL USAGE FORM

Users of all agricultural chemicals should maintain a record of usage (Log of Operations, Spray Log) for every use of a substance. Completion and maintenance of such records improves accountability for product and its use, appropriateness of weather conditions, compliance with procedures and legislation, assistance with calculation and distribution of disposal costs and provides a system that enables supervisors to effectively audit and manage their operations. Such records should be designed to achieve the various requirements of an operation.

The maintenance of a suitable chemical usage record is the responsibility of each user and shall be utilised for all substance use.

15. LABELLING OF CHEMICALS

As a minimum the label on a chemical container must include:

- the chemical name
- ingredients (where the chemical is a mixture)
- risk and safety phrases appropriate to the chemical

The label on a container of an agricultural chemical must contain information including:

- the identity and amount of the active constituent and any other poisonous substance;
- the poison schedule, any cautionary statements, safety directions and first-aid instructions;
- the pests controlled by the chemical, and crops, animals or other host situations for which it is registered;
- the application rates for the chemical;
- any restriction on methods of application;
- the withholding and re-entry periods;
- directions for storage;
- batch number and manufacture or expiry dates; and
- mixing instructions.

Under the requirements of the Chemical Usage (Agricultural and Veterinary) Control Act, a chemical must not be used from a container that does not have a registered label fixed to it at the time the chemical is being removed. For practical purposes, if the label has been lost and the contents of a container are known, you should attach a temporary label where practicable. If the product name is unknown, then it should be labelled:
"CAUTION. DO NOT USE. UNKNOWN SUBSTANCE."
All unlabelled chemical containers should be identified or disposed of promptly.

All chemical packages, containers, tanks or bulk stores must be marked to clearly show the identity and the hazard of the goods stored. The labelling of packages is covered by several requirements –

- Section 7 of the ADG Code for dangerous goods during transport,
- the NOH&SC National code of practice for the labelling of workplace substances and for workplace hazardous substances, and
- the Standard for the uniform scheduling of drugs and poisons for scheduled poisons.

Where chemicals are decanted or dispensed into other containers these new containers must also be fully labelled unless the chemicals are immediately used. Labels for decanted packages are the same as for the original container, but a simplified label would be acceptable as a minimum. This label should display the chemical name, dangerous goods class symbol and risk and safety phrases. Labels for decanted chemicals may in most cases be printed from *Chemwatch* (coloured class labels may be needed in conjunction with the *Chemwatch* labels).

Classes of dangerous goods

Class 1 - Explosives Class 2 - Gases
Class 3 - Flammable liquids
Class 4 - Flammable solids
Class 5 - Oxidizing agents & organic peroxides Class 6 - Toxic & infectious substances
Class 7 - Radioactive substances
Class 8 - Corrosives
Class 9 - Miscellaneous dangerous goods and articles

Labelling for the different schedules is shown below.

SCHEDULE 2 PHARMACY MEDICINE
SCHEDULE 3 PHARMACIST ONLY MEDICINE
SCHEDULE 4 PRESCRIPTION ONLY MEDICINE or PRESCRIPTION ANIMAL REMEDY
SCHEDULE 5 CAUTION
SCHEDULE 6 POISON
SCHEDULE 7 DANGEROUS POISON
SCHEDULE 8 CONTROLLED DRUG

16. DECANTING

A chemical must not be transferred from one container to another (decanted) unless the container to which it is being transferred is properly labelled (mixing/ measuring vessels excluded).

When decanting a chemical into another chemical container be aware that some chemicals can react with the container. Check containers for compatibility and contamination.

The label on the new container must show that the container holds the same chemical at the same concentration as the original.

All chemical containers that have been filled by decanting from another package must have the following minimum labelling -

- the chemical name
- the ingredients (where the chemical is a mixture)
- the risk and safety phrases appropriate to the chemical.

Installation of an original label from the manufacturer is preferred to labels that meet the requirements of minimum labelling. Chemwatch can produce appropriate labels.

17. MEASURING AND MIXING

It is critical that persons responsible for measuring and mixing chemicals are aware of the correct method for doing the job to minimise the risk of exposure to themselves and others. PPE selection and use should be in accordance with the risk assessment outcome and the SDS/label directions. Measuring and mixing should be done in a well-ventilated area. Accurate measuring devices should be available including clean graduated jugs or cylinders or a scale if required for preparing mixtures. Enclosed measuring and decanting devices should be sought and used where possible to minimise the risk of exposure from concentrates.

In all circumstances, you should read the label directions prior to opening and ensure all directions are followed. Effective and accurate calibration of equipment will minimise or eliminate excessive prepared spray solution. The measuring and mixing process is the most appropriate time to wash empty chemical containers. The water used to rinse the container or rinsates should be added to the spray tank during mixing. Any rinsing should be carried out immediately after empting the chemical container, as residues are a lot harder to remove when dry. Disposal of drums becomes a lesser environmental issue if they are rinsed correctly. All chemical containers should be triple-rinsed and holed to render unusable where they are not recyclable.

18. USING SPRAY EQUIPMENT

Where the chemical is in the application equipment, such as a spray tank, you are not required to label the application equipment where-

- it is likely to be used immediately
- it is filled with a chemical that has been prepared or diluted ready for use;
- it will be controlled by the applicator; and
- there is minimal risk of any other person misusing it.

After each spraying:

- care should be taken to remove any remaining chemical mix from the tank (should always be minimal)
- the tank should be partially filled with clean water and rinsed;
- PPE selected for the chemical application process, should be worn during cleaning. This should be reviewed to ensure the PPE adequately controls any exposure risk during the cleaning phase.
- the suction filter should be removed and washed, spray lines flushed, nozzles and nozzle filters washed; and
- chemical washed from the tank should be reused or sprayed over the crop or fallow ground.

All spray equipment should be regularly serviced and maintained to ensure its safe and efficient operation. Where faults are identified the equipment should be repaired immediately, removed from service by relocating to an inaccessible location or tagged to prevent others from using it.

19. WASTE DISPOSAL

Where possible, unwanted or unused registered chemical concentrate should be offered to other persons or sections to enable the chemical to be used as described on the label.

The University Environmental Management Plan requests the containment of chemical residues from washing, rinsing, cleaning, spills or other emergencies within the facility's waste storage tanks. Wherever this is not possible spraying operators should submit their justification for alternative methods of disposal to the *Gatton Campus Agricultural Chemical Handling & Storage Facility Management Committee* for approval.

Empty containers and unused chemicals may pose serious risks to human health and safety. Containers should be rinsed as part of the mixing task and be disposed of or re-cycled in the manner suggested on the label. Drums, other packages and containers should be returned to the supplier when the receptacle is marked "returnable" or the label specifies return to point of sale. Where rinsed containers are stored, lids or bungs should be removed to prevent re-use. Containers should not be burned. Explosions may occur and the smoke and fire products may present a risk to health or the environment.

Unused, unwanted or unknown chemical products can be disposed of through the University of Queensland Science Store. Empty containers, that have been triple rinsed, may be stored in Bay 4 of the storage complex until collected by the relevant local authorities, e.g. Drum Muster.

REMOVAL OF WASH DOWN RESIDUE FROM STORAGE TANKS - PROCEDURE.

The waste water contained in the facility waste storage tanks have been tested in the past and found to contain insignificant levels of agricultural chemicals so it has been pumped out and released at approved paddocks. This activity is carried out by the UQ Gatton Farms Cropping Unit.

20. STORAGE AND CONSUMPTION OF FOOD AND DRINK

The confines of the complex should be considered similarly to laboratories where chemicals or biological materials are stored, handled or used for teaching and/or research purposes.

Eating and drinking within the Agricultural Chemical Handling and Storage facility is strictly prohibited.

The consumption of food and drink in laboratories is a highly dangerous practice and a policy of no smoking, eating or drinking in laboratories or other areas of chemical or biological material areas use shall be enforced at the Agricultural Chemical Handling and Storage Facility.

However, this would not prohibit the holding of lunches in sealed containers within a desk or refrigerator, if there are no other alternatives. The control room/office of the wind tunnel and the room located at the eastern end of the storage bays would be the only appropriate locations for this but only after it has been confirmed that there has been no contamination from chemicals within these rooms.

21. REFERENCES

Work Health and Safety Regulation 2011 (Qld)

Agricultural Chemical User's Manual, *Guidelines and Principles for responsible agricultural chemical use*, The State of Queensland, Department of Primary Industries and Fisheries 2005

Queensland Government Department of Justice and Attorney-General – *Work Health & Safety – Hazardous Chemicals Advisory Standard 2003*.

Labelling of Workplace Hazardous Chemicals Code of Practice 2011

2.70.02 Chemical Manifest Procedures – UQ Policy and Procedures Library

2.70.09 Chemical Spill Response – UQ Policy and Procedures Library

2.70.05 Chemical Storage Safety Guidelines – UQ Policy and Procedures Library

APPENDIX #1

FOP & Site Induction; Declaration Form

This *Safety Declaration Form* is complementary to the University Procedures and Policies. Please indicate your answer in the box provided by initialing.	
I have completed the on-line General Workplace Safety and the Sustainability (Laboratory) induction	
I have been given the *Agricultural Chemical Handling and Storage Facility* Procedures booklet to keep. I understand the requirements of working in this unit and will use the booklet for reference. (Version 4.0 October 2018)	
I will comply with safe working procedures established by the university, school or unit and follow the OH&S directions of the Head of School/Organisational unit or supervisor. I will comply with EMS policies. (Web links http://www.uq.edu.au/ohs http://www.pf.uq.edu.au/ems.html)	
I have completed training in the application of AgVet chemicals, ACDC licence, ChemCert or have completed chemical units of competency.	
I will use appropriate personal protective equipment and safety systems as required, directed, indicated and identified by chemical labels, risk assessments, supervisors and procedures.	
I will assist and/or prepare risk assessments before commencing work or research. Risk assessments are conducted to identify, assess and control hazards associated with my work. I will follow the identified controls in the risk assessments. I will read and be familiar with any completed applicable risk assessments applying to my research or work.	
I understand that I must report OH&S problems. I must report workplace faults and hazards to my supervisor and to the school health and safety officer asap after being aware of them. I must report injury, illness and all near miss incidents using the UQSafe-Incident database as soon as possible after the incident, to my supervisor and to the School Health and Safety Officer.	
I have been instructed on what to do in case of an emergency – Call security Ext 53333 or 3365 3333. I will evacuate and secure the area and alert others of any danger.	
I have been shown the location of the fire extinguishers, fire hoses, first aid kit, emergency shower/eye wash station, escape routes & emergency assembly point. I understand that naked flames are prohibited.	
I will not use any equipment or other item that I have not had instruction on how to use. I will follow the standard operating procedure for any item that I use.	
I understand that no alcohol, smoking or drugs are permitted within the facility and the campus.	
I will not make any unauthorized equipment adjustments. I will leave the area clean and tidy at all times.	
Induction Officer (print name)	

Your Name (print): Date:

Signature

APPENDIX #2

Agricultural Chemical Handling and Storage Facility

User Contact Details

CAMPUS DIRECTOR (CHAIR OF COMMITTEE)	Janelle Zahmel gatton.director@uq.edu.au	(07) 54601201
CROP RESEARCH UNIT (FACILITY OVERSEER)	Mark Deegenaars m.deegenaars@uq.edu.au Travis Dance t.dance@uq.edu.au	0437 974 583 0411 445 218
UQ GATTON FARMS	Mark Bauer gambauer@uq.edu.au Milton Lester milton.lester@uq.edu.au	0439 675 115 0428 110 451
SAFS/CPAS	Chris O'Donnell c.odonnell@uq.edu.au Andrew Hewitt a.hewitt@uq.edu.au	(07) 54601317
CSIRO GATTON RESEARCH STATION (SUPPORT MANAGER)	Stephen Soderquist stephen.soderquist@csiro.au	0418462665
SCHOOL OF MECHANICAL AND MINING ENGINEERING (PROJECT LEADER)	Guan Zihqiang guan@uq.edu.au Harry Penkeyman harry@uq.edu.au	0449287180 0417779738

APPENDIX #3
Scheduled Facility Tasks; Maintenance and Monitoring

Weekly, monthly and annual checks in the facility.

- **Weekly checks**
- Monitor and record the depth of waste in the waste collection sumps.
- Monitor the cleanliness of the wash down pad and inlet sump.
- Monitor the functioning of the automatic wash down apparatus.
- Monitor for the presence of spill kits and first aid kit.
- Walk the compound fence line as a general check of fence integrity.
- Check the compound for any other obvious issues.
- Report all repair and maintenance issues to Property and Facilities when found for their action.

- **Monthly checks**
- Check the spill kits for complete and ready for use.
- Check the quantities of empty drums. Organise their removal if the quantity warrants this action.
- Monitor the operation of the emergency shower/eye wash station and test fire hose and reel operation. Test emergency shower and eye wash station and initial the inspection record.
- Monitor general housekeeping throughout the facility including storage of unused, unclaimed or faulty equipment.

- **Annual checks**
- First Aid Kit, check the completeness and date of the goods in the kit. Kits are checked once per semester by a contractor and recorded.
- Ensure all users have updated their chemical manifests.
- Organise the removal of the waste chemical in the underground sumps if warranted.
- Empty Drum Muster as required.