

Imported Units of Competence – Forest Growing & Management

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Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

1 Assemble fire and emergency equipment

- 1) Equipment functions according to specification.
- 2) All couplings and connections are secure.
- 3) Missing items or parts are identified and reported in accordance with organisational procedures.
- 4) Assembling of equipment follows agency procedures and occupational health and safety guidelines.

2 Inspect equipment for faults or damage

- 1) Inspection is conducted in accordance with occupational health and safety specifications and organisational procedures.
- 2) Faulty or damaged equipment is recorded and reported in accordance with organisational procedures.
- 3) Replacement equipment is requested in accordance with organisational procedures.
- 4) Inspection is conducted in accordance with maintenance schedule and degree of use.

3 Carry out minor servicing of equipment, appliances and facilities

- 1) Servicing is conducted in accordance with organisation's or manufacturer's specifications and schedules.
- 2) Equipment, appliances and facilities are cleaned and maintained in accordance with organisational procedures/requirements and occupational health and safety guidelines.
- 3) All cleaning agents and solvents/chemicals are used and stored in accordance with occupational health and safety guidelines.
- 4) Equipment is "made ready" and securely stored in designated area/location
- 5) Equipment functions in accordance with specifications.

Range of Variables

- Equipment may include everything carried on appliances or stored at the station/base such as: ropes; hand tools; hoses; branches and nozzles; ladders; pumps; rescue tools; salvage tools; personal protective equipment and clothing; breathing apparatus; forcible entry tools; portable fire extinguishers; radiation shielded crew havens; vehicle cabins with/without sprays; station and surroundings; drip torches; maps; chainsaws; communications equipment; knapsacks
- Inspection is typically limited to: visual assessment of condition; detection of operational failure of motorised equipment; detection of seizure or physical failure of equipment
- Servicing may include: lubrication; pressure checks; sharpening blades; replacing washers; fuel and water; flow rate checks; smoothing handles.

Evidence Guide

- Competency is to be demonstrated through observation of performance on the job over a period of time, utilising equipment typically carried by appliances with which the applicant works.

Underpinning knowledge

- Equipment and appliances to be used.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

1 Locate and identify fire systems

- 1) Checks are made to ensure that equipment functions according to specifications.
- 2) All couplings and connections are secure.
- 3) Missing items or parts, defects, or anomalies are recorded and/or reported in accordance with organisational procedures.
- 4) Defective equipment is replaced or repaired in accordance with organisational procedures.

2 Check and monitor the status of fire alarms

- 1) Inspection is conducted in accordance with organisational and occupational health and safety specifications .
- 2) Faulty or damaged alarms are recorded and reported in accordance with organisational procedures.
- 3) Defective equipment is replaced or repaired in accordance with organisational procedures.
- 4) Inspection is conducted in accordance with maintenance schedule and degree of use.

3 Check and test equipment readiness

- 1) Firefighting equipment is tested to ensure it is in an operational condition in accordance with organisational standards.
- 2) Testing is conducted in accordance with organisational procedures.
- 3) Records are maintained of test results in accordance with organisational procedures and regulatory requirements.
- 4) Defective equipment or sub-standard test results are reported to the supervisor in accordance with organisational procedures.

Range of Variables

- Fire fighting equipment may include: fire, emergency and support vehicles; pumps – vehicles mounted and portable; fire suppression equipment; rescue equipment; forcible entry equipment; first aid and life support equipment; ventilation equipment; salvage gear; small gear and ancillary equipment; communications equipment; personal protective equipment and clothing
- Inspections, tests, cleaning and servicing may be carried out: after use; daily fortnightly; quarterly; annually; as needed; on each shift; weekly; monthly; half yearly; multiple-yearly basis
- Firefighting facilities may include: caches/stores; training rooms and areas; firefighting equipment storage and servicing areas
- Organisational procedures may include reference to: regulatory requirements; equipment manufacturer's recommendations; Australian Standards; industry practices
- Maintenance record systems may include: record sheets or books; computer databases; card systems; microfiche systems.

Evidence Guide

- Competency is to be assessed over a period of time based on consistent performance in maintaining firefighting equipment and facilities within the scope of the applicant's responsibility.

Underpinning knowledge

- Inspection schedules
- Equipment/vehicle checklists
- Maintenance and recording systems.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

- 1 Follow workplace procedures for hazard identification and risk control**
 - 1) Hazards in the work area are recognised and reported to designated personnel according to work place procedures.
 - 2) Appropriate procedures and work instructions for controlling risks and hazards are followed.
 - 3) Appropriate procedures for dealing with accidents occurring in the workplace are followed.
 - 4) Stressful situations are recognised and support is sought to minimise effect.

- 2 Implement hazard controls**
 - 1) Occupational health and safety guidelines are followed.
 - 2) Personal protective clothing and equipment is selected, donned and used in accordance with standard operating procedures and within limitations.
 - 3) Personal and public health is protected in accordance with standard operating procedures.
 - 4) Equipment appropriate to dealing with a hazard is used in accordance with standard operating procedures.
 - 5) Controls are implemented with minimum damage to the environment.
 - 6) Water and food intake and rest breaks are maintained in accordance with recommended health requirements.
 - 7) Activities/debriefing are undertaken which alleviate occupational stress.

- 3 Monitor and report on the workplace environment**
 - 1) Factors, which may create or increase risk of injury or environmental damage are identified and reported.
 - 2) Hazard controls are monitored to ensure continued effectiveness.
 - 3) Changes in fire behaviour and conditions are reported immediately to supervisor.

- 4 Warn crew of developing hazards**
 - 1) Contact is maintained at all times with other crew members and supervisor.
 - 2) Signals are understood, confirmed and acted upon.
 - 3) Warnings of hazardous situations are relayed to crew members using appropriate terminology and codes.
 - 4) Assistance is given to crew members in danger ensuring that personal safety is maintained in accordance with standard operating procedures.

- 5 Contribute to participative arrangements for the management of occupational health and safety**
 - 1) Occupational health and safety issues are raised with designated personnel in accordance with procedures and occupational health and safety legislation.
 - 2) Contributions to occupational health and safety management in the workplace are made within agency procedures and scope of responsibilities and competencies.

Range of Variables

- Hazards may include those associated with one or more of the following activities: structural fires; wildfires; prescribed burning; vehicle and industrial rescue/extrication; flood, storm and tempest rescues; day-to-day activities
- The nature of the hazard may be:
 - ◊ Chemical – spills; dangerous goods; vapours/poisonous gases/smoke; contaminated fire water; explosions/flammability; aerial retardant drops
 - ◊ Biological: infections; bites, stings; biologically active dusts; drownings; radiation
 - ◊ Environmental: flora and fauna; contamination of air/land/water
 - ◊ Physical: explosions; falling objects (trees, masonry, rocks etc.); subsidence; water load on buildings and contents; radiant heat; broken terrain; heat stress; dehydration; heavy machinery; structural; fatigue
 - ◊ Electrical
 - ◊ Psychological: critical incident stress; shock
 - ◊ Combustible Materials
- Activities to alleviate occupational stress include: critical incident stress debriefing; counselling services; colleagues; medical services; government agencies; communication and support through this chain of command
- Risk control measures may include: Protective clothing and equipment, such as: breathing apparatus; personal lines; personal distress units; respiratory protection; goggles and hearing protectors; adequate food, water and other welfare needs during extended operations; chemical protective clothing; turnout uniform and gloves; personal accessories kit; hard hat, safety boots, overalls and chainsaw chaps; Barriers; spill clean up kits; electrically insulated tools and equipment; vehicle protection hoses and devices; life support equipment/features include: heat radiation shielded crew haven; vehicle cabins with/without sprays; survival techniques include: in buildings; in wildfire situations
- Factors that may require monitoring include: traffic; wind strength/direction; fire development; water supply/pressure; vegetation type; spectators; temperature; structural integrity; relative humidity; slope/terrain
- Contact with crew members and supervisors may be: visual; guidelines; vocal; touch; radio
- Activities may be carried out under supervision.

Evidence Guide*Critical underpinning knowledge*

- Possible causes and symptoms of critical incident stress
- Methods of hazard control and reporting
- Use of protective clothing and equipment
- Procedures for participating in occupational health and safety arrangements.

Critical underpinning skills

- Identification of typical hazards in the workplace.

Critical assessment issues

Competence is to be assessed over a period of time based on occupational health and safety.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

1 Proceed to fire

- 1) The site of fire and the most effective route to the fire are ascertained.
- 2) The location of the fire is identified from apparent indicators at the scene or while on approach.
- 3) Access is gained to the site with minimum damage.
- 4) Evidence of the fire cause is protected and brought to the attention of the supervisor.
- 5) Appropriate maps are used for planning and operational purposes.

2 Locate and obtain extinguishing medium and/or equipment

- 1) Nominated extinguishing medium and/or equipment is located and obtained from nearest suitable point.
- 2) Equipment is used to deliver the nominated extinguishing medium.
- 3) Equipment is used in accordance with organisational procedures and manufacturer's guidelines.

3 Attack fires

- 1) Instructions are confirmed and implemented.
- 2) Equipment and materials used are appropriate to the incident.
- 3) Equipment is positioned and made ready for use.
- 4) Equipment is protected from damage.
- 5) Fire is attacked as directed and in accordance with organisational procedures.
- 6) Evidence of fire cause is protected and brought to the attention of the supervisor.

4 Observe and react to fire conditions

- 1) Conditions at the fire are observed and their effect of fire development anticipated and reported to the supervisor.
- 2) A clear line of retreat is maintained at all times.

5 Assist in ancillary firefighting operations

- 1) Activities to complement firefighting operations are carried out as directed and in accordance with organisational procedures.

Range of Variables

- Types of fire may include: structural fires; vehicle fires; fires involving electricity; wildfires; fires involving chemicals
- Fire extinguishing media may include: water; extinguishing powders; vaporising liquids; foam; gaseous extinguishing agents; other fire extinguishing substances
- Sources of firefighting media may include: hydrants; tankers; foam tanks or containers; open water sources; water filling points; portable or mobile extinguishers
- Access methods may include: forcible entry; via constructed trails; on foot; normal entry; by aircraft; by vehicle
- Equipment may include: hoses and hose fittings; branches, nozzles and monitors; ladders and rope lines; forcible entry tools; hand tools; drip torches; stand-pipes and hydrants; small gear and ancillary equipment; salvage gear; ventilation equipment; earth-moving equipment
- Personal protective equipment and clothing may include: wildfire protective clothing; chemical protective clothing; distress alarms; structural fire protective clothing; breathing apparatus; proximity suits
- Ancillary activities may include assisting with: forcible entry; guarding against hazards; salvage; making up equipment; mop-up and black-out; protection of the ignition site; securing the area; ventilation; overhaul; supply of materials; patrol
- Maps may include: topographic; specialise; aeronautical (WAC charts); cadastral; street directory; pastoral.

Evidence Guide

- Assessment of this unit may be in the context of one or more types of fires depending on the organisation's responsibilities
- Competency is to be assessed through observation of performance at two or more scenarios which are representative of the organisation's typical responsibilities.

Underpinning knowledge

- Firefighting equipment and media
- Firefighting procedures
- Support operations
- Fire behaviour.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

1 Assist with identifying and handling hazardous materials

- 1) Hazardous materials are identified in accordance with organisational procedures.
- 2) Hazardous materials are handled in accordance with organisational procedures.
- 3) Hazardous materials are diluted and/or contained in accordance with organisational procedures and/or advice from appropriate authorities.
- 4) Hazardous materials are recovered from the incident site in accordance with guidelines and procedures from the appropriate authorities.
- 5) Assistance is provided in obtaining samples in accordance with organisational procedures and/or advice from other authorities.

2 Assist with establishing hazard control and decontamination zones

- 1) Hazard control and decontamination zones are established in accordance with organisational procedures.
- 2) Assistance is provided to control personnel and equipment entering and leaving hazard control and decontamination zones in accordance with organisational procedures.
- 3) Records are kept of personnel and equipment as they enter and leave hazard control and decontamination zones.

3 Assist with decontaminating personnel and equipment

- 1) Personnel and equipment are decontaminated immediately following contamination, or possible contamination, by hazardous materials in accordance with organisational procedures and occupational health and safety guidelines.
- 2) Contamination incidents are recorded and reported in accordance with organisational procedures.

Range of Variables

- Hazardous materials data systems may include: United Nations number; dangerous goods codes; local authority registers; Hazardous materials Action Guide; Hazchem codes; government legislation; database systems; Materials safety data sheets
- Procedures may include: organisational procedures; disaster plans; company or organisational procedures; occupational health and safety practices and guidelines; government agency guidelines
- Equipment for containment and recovery may include: hazbins; original containers; absorbent materials; plugs and patches; sealable drums; shipping containers; personal protective equipment and clothing
- Neutralising and diluting agents may include: water; bicarbonate of soda; acids and bases
- Decontamination may include: wet decontamination techniques; dry decontamination techniques; combination of wet and dry decontamination techniques
- Sampling may include: gaseous samples; solid samples; liquid samples
- Analysis may involve: sampling equipment; external agency assistance.

Evidence Guide

- Competency is to be assessed by observation of performance in a number of selected scenarios over a period of time
- Underpinning knowledge
- Relevant Acts, regulations, codes and standards
- Methods of identifying and classifying hazardous materials
- Properties of hazardous materials
- Organisational procedures.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

1 Identify wildfire hazard reduction needs

- 1) Wildfire hazards are identified and reported to supervisor in accordance with organisational procedures.
- 2) Hazards that can be reduced or eliminated are reported to the supervisor in accordance with organisational procedures.
- 3) Wildfire hazard reduction strategies suitable to the hazard and locality are proposed.
- 4) Threat to people, property and the environment is identified and reported to supervisor in accordance with organisational procedures.

2 Inspect and test installed fire suppression/detection equipment

- 1) Fires prevention equipment and facilities are inspected and tested so that they are fully operational and satisfy the applicable requirements of standards and codes.
- 2) Any defects or abnormalities are reported to the supervisor in accordance with organisational procedures.

3 Carry out wildfire hazard reduction activities

- 1) Hazard reduction activities are conducted in accordance with wildfire prevention plans and/or hazard abatement programs and standard operating conditions.
- 2) Hazard reduction is achieved as outlined in the wildfire prevention plan and/or hazard abatement program and with consideration of the environmental impact.

4 Gather information for the development of plans

- 1) Information is gathered to assist with planning in accordance with organisational procedures so that comprehensive, accurate and up-to-date information is available to the organisation during operations.
- 2) During inspections and observations, any anomalies identified are reported to the supervisor in accordance with organisational procedures for pre-incident planning.
- 3) Planning information is gathered using standard forms and programs.

Range of Variables

- Criteria for selection of fire hazard reduction strategies may include: the steepness and aspect of terrain; the amount and flammability of vegetation; amount and type of existing development; the standard of egress; fire fighting services and facilities
- The range of hazards may include: fires (bush; grass; forest; plantation; heathland; peat); tree/grass types; poorly maintained and old structures
- Hazard reduction strategies may include: fuel reduction (prescribed burns, ploughing, grazing, fire breaks, slashing, spraying); community education; land management
- Activities may include: prescribed burns; ploughing; grazing; fire breaks; slashing; spraying; physical hazard removal; urban interface hazard abatement programs; reporting of hazards according to procedures
- Environmental impact considerations may include: smoke hazards; rare/endangered species; land degradation; flora and fauna protection; dieback
- Hazards are those that by their description pose a threat to life and property and may include: structures; substances; processes; physical features
- Risk areas include: refineries; chemical stores; industries; laboratories; public gatherings; transport terminals; rural risks; bushland risks; urban/rural/bushland interfaces; areas subject to civil disorder; limited access areas
- Fire protection equipment and facilities may include: fire extinguishers and hose reels; fire doors and other compartmentation features; hydrant and booster systems; wet and dry sprinklers and deluges; automatic and manual fire alarm systems; chemical fire suppression systems; automatic and manual mechanical ventilation systems; air handling systems; emergency warning and intercommunication systems; water sources; helitack based road networks and fire breaks
- Plans may be used for fire prevention and/or pre-incident planning purposes and may include information on: location and access; occupancy and use; fire equipment/facilities/procedures; predetermined responses; construction; special hazards and exposures; utilities (e.g. electricity and gas); after-hours contacts
- Information may be in the form of: maps, drawings and sketches; material safety data sheets; notes; pre-incident planning data sheets; computer databases
- Confidentiality regarding information may need to be maintained
- Building inspections may include: location and access; occupancy and use; fire equipment/facilities/procedures; construction; special hazards and exposures; housekeeping
- Assets may include: buildings; facilities; natural resources; social, cultural and environmental values
- Records may include: operational records; personal records; training records; clothing records; equipment assignment; station records; pre-planning records and drawings
- Documentation includes routine records; proformas; electronic systems and written reports.

Evidence Guide

- Operations are to be conducted under supervision. The assessment of a hazard as a threat should be emphasised as a legal responsibility of all fire fighters
- Competency is to be demonstrated through observation of performance on the job or off the job over a period of time, covering a range of hazard reduction strategies.

Underpinning knowledge

- Types of hazards and hazard reduction strategies
- Agency procedures
- Environmental impact considerations
- Testing/inspection of suppression and detection systems
- Filing and retrieval procedures
- Maintenance and updating of records
- Use of communications equipment.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994..

1 Control vehicle movement under operational conditions

- 1) Vehicle is steered, manoeuvred and positioned in accordance with traffic regulations and Agency procedures for operational situations.
- 2) Driving under emergency response conditions is carried out under emergency situation procedures to ensure the safest and most efficient route is taken to the incident.
- 3) Movements are within the limits of the vehicle under prevailing conditions, and in line with the manufacturer's specifications.
- 4) Engine power is co-ordinated with transmission to avoid engine stall and provide smooth and controlled movement.
- 5) Driving techniques which minimise the likelihood of injury to personnel, damage to property and disablement of the vehicle are used
- 6) Vehicle installed devices are monitored and vehicle is operated at peak performance.
- 7) Vehicle is stopped safely according to procedures and without damage or harm to persons.
- 8) Vehicle is positioned for safe and effective operations at the incident according to procedures.
- 9) Faults or damage to the vehicle are reported according to procedures.
- 10) Vehicle is recovered from a disabled position, if it occurs, and/or disablement is reported according to procedures.

2 Anticipate traffic, road and terrain under operational conditions

- 1) Vehicle movement is controlled in response to external conditions to ensure safety of persons.
- 2) Travelling conditions are constantly monitored to ensure safe operation of vehicle, and avoid injury to persons or damage to equipment.
- 3) Selected route of travel avoids delays due to traffic or condition of terrain.

Range of Variables

- Operational conditions may include: emergency response driving; driving in adverse terrain; driving in special environments (e.g. on active airport movement areas).
- Considerations may include: procedures; traffic conditions; levels of emergency response; adverse weather; traffic regulations; warning devices; adverse terrain; type of vehicle
- Driving may be carried out with limited supervision.

Evidence Guide

Critical underpinning skills

- Driving regulations
- Vehicle operating procedures.

Critical assessment issues

Competency should be assessed through observation of performance over a range of scenarios appropriate to the Agency.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

1 Position pumps

- 1) Pumps are positioned in accordance with organisation procedures.

2 Operate pumps

- 1) Pump types, components, ancillary equipment and principles of operation are identified.
- 2) Pump operation is in accordance with organisational procedures, manufacturer's specifications, and occupational health and safety guidelines.
- 3) Pumps are operated to ensure that pressure and flow meet operational requirements.
- 4) Pumps are monitored to ensure maximum efficiency of operation.
- 5) Pump operations are to be carried out ensuring no injury to personnel or damage to equipment or facilities occurs.
- 6) Mechanical malfunctions are responded to and reported to supervisor in accordance with organisational procedures.

Range of Variables

- Organisational procedures may include: agency procedures; occupational health and safety guidelines; agency training manual procedures; fireground procedures
- Pumps may include: portable multi-stage; self-contained units
- Agency procedures for pump operation may include: pumping practices; service guidelines
- Operation includes observance of: warning devices; pumping practices; service guidelines; gauges.

Evidence Guide

- Competency is to be assessed through performance over a period of time, on a number of occasions and in a variety of circumstances.

Underpinning knowledge

- Types of pumps
- Pump components and their principles of operation
- Operating procedures
- Ancillary pump equipment.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

1 Report details of fire

- 1) Fire details are reported in accordance with organisational procedures, so that firefighting activities can be co-ordinated.
- 2) Significant changes to the status of the fire are immediately reported in accordance with organisational procedures, so that tactics can be adjusted by the supervisor, if needed.

2 Select equipment

- 1) Equipment is selected which will most effectively combat and/or support firefighting operations in accordance with procedures.
- 2) Equipment is selected which will allow firefighting operations to be conducted safely in accordance with organisational procedures and occupational health and safety guidelines.
- 3) Equipment is used within its limitations so that its operation is safe and effective.
- 4) The fire is located and access to the fire is gained in the safest and most effective manner to minimise damage.

3 Attack fires

- 1) Firefighting methods and tactics are employed in accordance with organisational procedures to achieve established objectives and strategies.
- 2) Fire extinguishing media are selected and utilised in accordance with organisational procedures.
- 3) Firefighting activities undertaken minimise overall damage and impact on the environment.
- 4) Potential fire behaviour is anticipated and acted upon to ensure safety and achievement of established objectives.
- 5) The effectiveness of tactics employed is reported back to the supervisor.

4 Undertake ancillary firefighting operations

- 1) Activities to complement firefighting operations are carried out in accordance with organisational procedures.

Range of Variables

- Types of fires may include: structural fires; vehicle fires; fires involving electricity; wildfires; fires involving chemicals
- Reports may include: initial reports at scene; situation reports; status reports; reports of significant changes in conditions; reports of achievement of “benchmarks” during firefighting
- Firefighting media may include: water; extinguishing powders; vaporising liquids; foam; gaseous extinguishing agents; other fire extinguishing substances
- Equipment may include: hoses and hose fittings; branches, nozzles and monitors; ladders and rope lines; forcible entry tools; hand tools; drip torches; stand-pipes and hydrants; small gear and ancillary equipment; salvage gear; ventilation equipment; earth-moving equipment
- Firefighting considerations may include: types of fire; fire exposures; topography; size of fire; weather; available firefighting resources
- Firefighting methods may include: cooling the fuels, e.g. By applying water; interrupting a chemical reaction, e.g. by applying extinguishing powders; removal of fuels, e.g. by constructing a control line and/or back-burning; exclusion of oxygen, e.g. by applying a foam blanket or smothering with earth
- Access methods may include: forcible entry; via constructed trails; on foot; normal entry; by aircraft; by vehicle
- Personal protective equipment and clothing may include: wildfire protective clothing; chemical protective clothing; distress alarms; structural fire protective clothing; breathing apparatus; proximity suits
- Ancillary activities may include: forcible entry; guarding against hazards; salvage; making up equipment; mop-up and black-out; protection of the ignition site; securing the area; ventilation; overhaul; supply of materials; patrol.

Evidence Guide

- Fire suppression activities may be carried out with limited supervision as part of a co-ordinated team
- Application of this unit may be in the context of one or more types of fires depending on agency responsibilities
- Assessment is to be based on observation of performance at a representative range of actual and/or simulated fires/incidents
- Skills which are not commonly used in actual operations may be emphasised in simulated scenarios.

Underpinning knowledge

- Suppression equipment
- Extinguishing media
- Organisational procedures
- Strategies and tactics.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

1 Instruct and direct firefighters

- 1) Instructions and directions are communicated to employees through the use of simple, concise language.
- 2) Communication is clear, unambiguous and in line with identified needs.
- 3) Communication is maintained to re-emphasise work directions and to keep firefighters focused on key objectives.
- 4) Firefighters are encouraged to continue in a two-way communication process to ensure that messages are clearly understood.
- 5) Firefighters are informed and advised on agency procedures and industrial award conditions according to agency directives, agreements and legislative requirements.
- 6) Different styles of leadership are used where appropriate.
- 7) Effectiveness of leadership is evaluated.
- 8) Individuals are motivated to achieve identified objectives.

2 Solve problems and make decisions

- 1) Problems are solved and decisions are made to ensure optimum efficiency of operations and are in line with management objectives.
- 2) Personnel are involved in important decisions that affect the workplace and are encouraged to contribute in a two-way communication process, to ensure effective decisions and resolutions to the problems.
- 3) Consultative mechanisms are developed, implemented and maintained.

3 Provide advice for personnel appraisal

- 1) Advice is provided that is accurate and comprehensive to assist supervisor with compilation of appraisals to allow guidance for progress in agency.

4 Provide feedback on individual performance

- 1) Feedback is given to individuals on their performance in a regular manner that reinforces achievements.
- 2) Individual performance problems are addressed in a constructive and timely manner leading to improved performance.

Range of Variables

- Methods of providing instruction and direction may include: training manuals; classroom presentation; personal contact
- Policy and conditions may include: agency policy; award conditions; operational procedures; State/Federal legislation; Firefighters and Officers Industrial Awards
- Problems are solved utilising: knowledge base; access to relevant documentation; practical experience; appropriate training
- Personnel assessments will include: fireground behaviour; personal interaction; workplace routines
- Assessments will be conducted in accordance with: agency policies; Assessment Guidelines; skills, knowledge and attributes
- Feedback to staff on individual performance will be confidential
- Work may be without supervision and the work of others may be supervised, or teams guided and facilitated.

Evidence Guide

- Work may be without supervision and the work of others may be supervised, or teams guided and facilitated.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

1 Delegate tasks

- 1) Tasks are delegated to individuals together with the appropriate level of responsibility to maximise the training and development opportunities to those individuals.
- 2) Tasks are delegated which are within the competency and confidence of individuals. Staff work towards improving workplace efficiency and effectiveness.

2 Participate as a member of a work team

- 1) Participation in the work team proves effective contributions which ensure activities and projects are completed on time and on budget and desired results are achieved at the specified level of quality.

3 Interpret and administer awards and agreements

- 1) Awards and agreements are correctly interpreted and administered in accordance with agency procedures and priorities to ensure that agreed conditions are maintained.

4 Implement and monitor the agency's occupational health and safety policies, procedures and programs in the relevant work area

- 1) Relevant occupational health and Safety information is provided to the work team regarding the agency's occupational health and safety policies, procedures and programs.
- 2) Members of the work team are consulted regarding occupational health and safety issues, and occupational health and safety issues are referred or resolved according to procedures, with feedback provided promptly.
- 3) Existing and potential hazards in the work environment are identified and reported so that risk assessment and control procedures can be applied.
- 4) The agency's procedures for controlling occupational health and safety risks are implemented and monitored.
- 5) The agency's procedures for dealing with hazardous events in the work environment are implemented when needed.
- 6) The agency's procedures for providing occupational health and safety training are implemented and monitored.
- 7) The agency's procedures for maintaining occupational health and safety records are implemented and monitored.

Range of Variables

- Delegation of tasks will include consideration of the following factors: complexity of task; competency level of worker; monitoring requirements; support requirements; behaviour of individuals
- Participation activities may include: assisting with pre-fire plans; budget preparations; rescue crew; firefighting crews; working parties; first aid teams
- Issues relevant to the interpretation and administration of awards and union agreements may include: federal, state and organisation agreement negotiations; equal employment opportunity; employee entitlements; custom and practice
- Hazards may include those associated with one or more of the following activities; structural fires; wildfires; prescribed burning; vehicle and industrial rescue/extrication; flood, storm and tempest rescues; first aid incidents
- The nature of the hazard may be:
 - ◇ chemical: spills; dangerous goods; vapours/poisonous gases/smoke; contaminated fire water; explosions/flammability; aerial retardant drops
 - ◇ biological: infection; bite, sting; biologically active dust; drowning; radiation
 - ◇ environmental: flora and fauna; contamination of air/land/water
 - ◇ physical: explosions; falling objects (trees, masonry, rocks etc.); subsidence; water load on buildings and contents; radiant heat; broken terrain; heat stress; dehydration; heavy machinery; structural
 - ◇ electrical
 - ◇ psychological: critical incident stress; shock
 - ◇ combustible materials
- Activities to alleviate occupational stress include: critical incident stress debriefing; counselling services; colleagues; medical services; government agencies.

Evidence Guide

- Work may be without supervision and the work of others may be supervised, or teams guided and facilitated.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

1 Advise on wildfire prevention strategies

- 1) Wildfire risks are identified and rated using fuel loads and geographic information to interrelate with terrain.
- 2) Property risks are identified and rated and the likelihood of ignition related to surrounding bush and terrain.
- 3) Hazard reduction planning has local community input and support.
- 4) Advice provided to organisation planners and local authorities on wildfire prevention strategies is within legislative responsibilities.
- 5) Wildfire prevention/risk reduction activities selected are suitable to the hazard and locality and take into account protection of property and the environment.

2 Implement and monitor wildfire hazard reduction

- 1) Hazard reduction is achieved in accordance with wildfire prevention plans and standard operating procedures and with consideration of their environmental impact..
- 2) Progress reports include any difficulties in achieving the target and recommendations for action.
- 3) Activities are co-ordinated with relevant authorities and other responsible organisations.
- 4) Recommendations include amendments to prevention plans for subsequent years.

Range of Variables

- The criteria for assessment of fire hazards ratings may include: frequency and length of fire season; local fire history; steepness and aspect of terrain; standard of egress; amount and flammability of vegetation; firefighting services and facilities; standard of repair/maintenance of structure and surrounds; willingness and capacity of occupants to take action
- The range of hazards may include: fires (bush; grass; forest; plantation; heathland; peat); tree/grass types
- Prevention strategies may include: fuel reduction (prescribed burns, ploughing, grazing, fire breaks, slashing, spraying); community education; land management.

Evidence Guide

- Work may be without supervision and the work of others may be supervised, or teams guided and facilitated.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

1 Establish and monitor fireground communications

- 1) Fireground communications are established and monitored to ensure effective communication between personnel and other emergency services in accordance with organisation procedures.
- 2) Communications are sent to maintain security and confidentiality of information according to organisation procedures.

2 Monitor operational procedures

- 1) Operational procedures are continually monitored to ensure the safety and welfare of personnel in accordance with organisation procedures and occupational health and safety guidelines.
- 2) Operational procedures are continually monitored to ensure that emergency response activities are effective.
- 3) Additional resources are requested as necessary to enhance emergency response activities.

Range of Variables

- Fireground communications may include: recordkeeping; radio communications; telecommunications; inter-service liaison; interpersonal communication
- Other emergency services may include: ambulance service; police service; hospital authorities; state emergency service; rescue organisations; company fire and rescue squads; various service organisations; electricity companies; water service operator
- Practices and procedures may include: occupational health and safety codes of practice applied in accordance with industry standards; organisation procedures; organisation practices
- Additional resources may include: backup appliance and crew; lighting unit; personnel; hazardous material unit; medical assistance; heavy mechanical machinery; specialised appliance; breathing apparatus unit; communications vehicle; arson investigation unit; media liaison officer; chief officer; police and ambulance.

Evidence Guide

- Work may be without supervision and the work of others may be supervised, or teams guided and facilitated.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

1 Provide reports

- 1) Information is gathered and reports are provided to facilitate firefighting and fire investigation in accordance with organisational procedures.
- 2) Significant changes in fire status and actions taken are reported, and requests for assistance are made when needed.

2 Select resources

- 1) Selection of resources is monitored and carried out according to procedures such that effective combating of the fire and support of firefighting operations is achieved.
- 2) Equipment use is monitored and carried out such that limitations are not exceeded and all equipment is accounted for.

3 Attack fires

- 1) Firefighting operations are monitored and carried out in compliance with organisational and occupational health and safety procedures and guidelines.
- 2) Operations to gain access to the fire are monitored and carried out in a safe and effective manner and result in minimum overall damage.
- 3) Fire extinguishing medium selection is monitored and carried out such that safe and effective fire suppression is achieved.
- 4) Selected firefighting tactics align with strategies determined for incident, and firefighting objectives are achieved.
- 5) Potential fire behaviour is anticipated and acted upon such that established objectives are achieved.
- 6) Personal protective equipment and clothing appropriate to the conditions are used in compliance with organisational and occupational health and safety procedures and guidelines.

4 Conduct ancillary firefighting operations

- 1) Ancillary activities are determined, monitored and carried out such that established strategies and objectives are achieved.
- 2) Provision of personnel support is in compliance with organisational and occupational health and safety procedures and guidelines.
- 3) Debriefing activities are participated in with other personnel.

Range of Variables

- Types of fires may include: structural fires; vehicle fires; fires involving electricity; wildfires; fires involving chemicals
- Reports may include: initial reports at scene; situation reports; status reports; reports of significant changes in conditions; reports of achievement of “benchmarks” during firefighting
- Firefighting media may include: water; extinguishing powders; vaporising liquids; foam; gaseous extinguishing agents; other fire extinguishing substances
- Firefighting considerations may include: types of fire; fire exposures; topography; size of fire; weather; available firefighting resources.

Evidence Guide

Underpinning knowledge

- Occupational health and safety guidelines
- Selection criteria
- Characteristics and limitations of protective equipment
- Testing and checking procedures
- Principles of operation.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

1 Employ protective clothing and equipment

- 1) Personal protective clothing is selected and donned in fire, emergency and training incidents in accordance with identified need and agency procedures.
- 2) Personal protective clothing is checked and/or tested prior to entry into fire and emergency situations to ensure it is operational according to agency procedures.
- 3) Personal protective equipment is selected and operated in fire, emergency and training incidents in accordance with identified need and agency procedures.
- 4) Equipment is checked and/or tested prior to entry into fire and emergency situations to ensure it is operating effectively in accordance with agency procedures.
- 5) Equipment use is monitored and carried out such that limitations are not exceeded and all equipment is accounted for.

Range of Variables

- Personal protective clothing may include: firefighters' turn-out clothing; gas tight suits; chemical splash suits; helmet; boots
- Organisational procedures may include: agency procedures; occupational health and safety guidelines; agency training manual procedures
- Testing procedures may include observance of: agency testing procedures; codes of practice; manufacturer's specifications
- Personal protection equipment may include: compressed air breathing apparatus (CABA); air lines; distress signal units (DSU); control boards; closed circuit breathing apparatus (CCBA); protective apparel
- Operational procedures include: agency procedures; occupational health and safety guidelines; agency training manual procedures; standard operational procedures; CABA and CCBA procedures; codes of practice.

Evidence Guide

- Competency is to be assessed by observation of performance over a period of time.

Underpinning knowledge

- Occupational health and safety guidelines
- Selection criteria
- Characteristics and limitations of protective equipment
- Testing and checking procedures
- Principles of operation.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

1 Carry out fire investigation

- 1) Fire investigation is carried out to identify the cause and circumstances of fire.
- 2) Scene of fire is effectively secured, preventing contamination of evidence and destruction of fire scene, to expedite the investigation process.
- 3) Crime scenes are identified and relevant information communicated to police.
- 4) Relevant information is recorded in the form of reports that meet agency requirements.
- 5) Agencies and coroners are assisted by the provision of accurate information and professional advice relative to fire behaviour and ignition patterns that can lead to changes in practices, products and legislation.

Range of Variables

- Fire investigation may apply to all fires, including rural and urban, where the cause is not readily known. It includes scenes of explosions, the occurrence of malicious false alarms, the interviewing of witnesses and the gathering of evidence that will lead to fire cause determination
- Relevant information may include reports from witnesses and evidence that may lead to fire cause determination.

Evidence Guide

- Activities may be carried out with general guidance only, and may involve supervision, planning and management of the work of others
- Competency should be assessed on the job over a period of time
- Underpinning knowledge may be assessed through oral or written questions, or completion of projects.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

- 1 Establish and manage command and/or control of a major incident**
 - 1) Objectives are identified, and strategies are implemented to resolve a major incident, according to procedures.
 - 2) A system of incident command/control, including the delegation of support functions to an incident management team, is implemented according to procedures.
 - 3) Operations are implemented to resolve the incident and to meet the identified objectives, according to procedures.
 - 4) Recommendations are made to meet command and control objectives.
- 2 Establish and manage communications and liaison at a major incident**
 - 1) Communications are established and maintained so that effective command and/or control of the incident utilising the incident management team and a wide range of resources is facilitated.
 - 2) Liaison is established and maintained with other agencies, organisations and the media.
 - 3) Debriefings are co-ordinated or conducted.
- 3 Document incident information for reporting, analysis and evaluation**
 - 1) Incident reports are collected and documented according to agency procedures.
 - 2) Incident data is analysed and evaluated to resolve the incident.

Range of Variables

- Types of incidents may include: major structural fires; large transportation incidents; major dangerous substances incidents; major wildfires; major rescue incidents; other types of major incidents
- Responsibilities may include: assume control; review planning; conduct briefings; liaise with supporting personnel; ensure safety of all personnel; manage the media; appoint and manage staff; assess the incident; plan combat of the incident; allocate tasks; report to responsible agency
- Major incidents typically involve a large number of teams operating under a defined command/control structure and include support functions
- Activities typically include overall command and/or control of the incident management team, and may include co-ordination of resources from a wide range of agencies and/or organisations
- Activities may be carried out under legislative powers granted for handling major emergency situations. Scope of command and/or control typically includes all of the resources and activities at a large or highly complex incident.

Evidence Guide

- Activities may be non-routine and carried out independently. Responsibility for the management of the output of others, and accountability for the outcomes of the activity may exist.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

1 Take control of emergencies

- 1) Control is undertaken within legislative and organisation authority and responsibilities.
- 2) Resources are managed to facilitate successful control.
- 3) Available plans are used to facilitate successful control.
- 4) Decisions are expeditiously made and appropriate to the needs of each incident.
- 5) Management strategies are chosen with are appropriate to the situation.

2 Liaise with organisations

- 1) Communication and liaison activities facilitate effective information exchange to achieve a co-ordinated approach to management control.
- 2) Debriefings are co-ordinated or conducted.

Range of Variables

- Emergencies typically are incidents or a group of incidents that are sufficiently complex to involve multiple resources and require management co-ordination above the level of an individual incident command and control structure
- Emergencies may involve multiple organisations, multiple jurisdictions, and may cross state and territory borders
- Incidents may be non-routine and require adjustment of procedures or decision making from first principles within the boundaries of legislative authority
- Resources may include: management and planning teams; other organisations; equipment and services; inter and intrastate organisations; assistance from the public; consumables
- Scope of management may include a significant part of a large of highly complex organisation, or a specific function affecting all or an organisation.

Evidence Guide

- Activities may be non-routine, carried out independently and involve co-ordination between a number of incidents. Responsibility for the co-ordination of the output of independently operating teams, and accountability for the outcomes of a wide range of activities may exist.

Description

This is a unit from the Australian Fire Agencies National Competency Standards, 1994.

1 Manage fire prevention and fire safety activities

- 1) Fire prevention and fire safety strategies and policies for identified fire risks and hazards are managed.
- 2) The economic, social and environmental impact of emergencies is estimated based on available information and response levels determined accordingly.
- 3) Strategies and objectives for fire prevention and fire safety are negotiated with industry, local government and other government organisations.
- 4) Changes needed to policy, legislation and regulations are recommended.
- 5) Agency procedures and practices are aligned with organisation policy regarding fire prevention and fire safety.
- 6) Efficiency of the organisation's fire prevention and fire safety activities is assessed against performance indicators.

2 Manage fire prevention and fire safety public relations

- 1) Fire prevention and fire safety public relations are managed according to organisation policy.
- 2) The organisation perspective is provided on major safety issues and disputes involving fire prevention and safety.
- 3) Financial and community benefits are identified and communicated to all stakeholders.
- 4) Competent personnel at all levels are available to advise the community on basic fire prevention/safety precautions.
- 5) Exemption from compliance with fire regulations and by-laws is managed according to organisation procedures and relevant legislation and regulations.
- 6) Reasons for granting exemption are documented and referenced to appropriate legislation, codes and standards.

3 Assess and predict problems in relation to fire safety

- 1) Problems are assessed and accurately diagnosed at an early stage and appropriate cost-effective solutions are identified and communicated.

4 Develop fire prevention and pre-incident plans and procedures

- 1) Fire prevention and pre-incident plans and procedures are assessed, developed, and approved, ensuring compliance with legislation, regulations and organisation objectives.

Range of Variables

- Considerations may include: organisation policy and strategies; legislation and community needs
- Regulatory framework includes all local, state and federal Acts, regulations and codes of practice, including those set by the Australian Standards Association, which relate to the range of fire safety activities undertaken by the organisation
- Advice and liaison may cover: hazard reduction/abatement practices; evacuation procedures; personal safety and fire survival; fire safety practices and legislation; installed fire protection requirements
- Information may be disseminated by: conducting exercises; giving lectures; addressing special interest groups; providing reports and recommendations both in writing and at presentations
- Fire safety activities refer to a range of tasks undertaken by the organisation including: inspection of building plans; representation on standards committee; hazard reduction/abatement programs; inspection of installed fire suppression systems; advice on community safety
- Fire safety problems can include: compartmentation; distance of travel for egress; smoke movement; means of egress; pressurisation
- Solutions to problems are based on: Building Code of Australia; local and government requirements
- Organisations liaised with may include: local authorities; public bodies; state bodies; private industry; community organisations
- Information is provided to: industry; other emergency services; commerce; local, state and federal government organisations; other community groups
- Plans may include: on and off-site plans; building inspection plans; local and district fire prevention plans; resource plans; standards of fire cover; predetermined response plans
- Scope of management may include workplace of moderate complexity and/or one or more work groups, or an equivalent part of a large or highly complex workplace, or a specific function affecting all of an organisation
- Stakeholders are individuals and groups who may be affected by fire prevention and fire safety policy, or can make critical demands on the organisation, or can exercise influence over future fire prevention.

Evidence Guide

- Work is likely to be under limited guidance with the responsibility for the management of others
- Assessment should be on the job over a period of time. Underpinning knowledge may be assessed through completion of projects or presentation of portfolios.

Description

This is an industry-endorsed unit of competence within the Natural and Cultural Resource Management National Competency Standards.

Prescribed burning may be used for regeneration and/or fuel reduction.

1 Identify advantages for and risks of burning

- 1) Species and populations of flora within area requiring fire for regeneration are identified and recorded to organisation procedures, where appropriate.
- 2) Optimum frequency and intensity of burning is established in terms of previous burns to determine timing.
- 3) Species, experimental plots, their locations and populations that might be adversely affected by fire are located and recorded to organisation procedures.

2 Plan the burn

- 1) Timing of burn is determined to biological and cultural safety, legislative and organisation requirements.
- 2) Habitat/ecosystem to be treated is delineated to optimise the benefits of the burn and limit damage to other species, life and property.
- 3) Risk assessment is made to identify potential environmental hazards and degradation.
- 4) Process to monitor burn is developed in terms of fire management procedures.
- 5) Plan the statistics on burn to be collected and recorded to develop improved procedures and to monitor effects.
- 6) Burn activities follow legislative, fire safety and occupational health and safety requirements.
- 7) Stakeholders are consulted regarding burning activities to ensure any cultural requirements are met and to maximise safety.
- 8) Resources for burn are obtained in accordance with organisation procedures.
- 9) Any approvals/permits required are identified and obtained.

3 Communicate burn requirements

- 1) Details of burn plans are documented according to organisation procedures.
- 2) Plans for burn are communicated to staff according to organisation procedures.

Plan burning activities natural and cultural resource management FPINCR033A

Range of Variables

- The place/area may include: State Forest; a declared park/reserve under State/Territory or Commonwealth legislation; leasehold crown lands; privately owned park/reserve; privately owned land where State/Territory or Commonwealth land management, conservation or parks/reserves legislation applies; a discrete place of potential or known natural resource significance
- Natural resources are those indigenous species, ecological processes, geophysical areas and water resources of value within the organisation's area of responsibility
- Plan for burn may be: local; incorporated in a park/reserve management plan; covered by internal organisation memos and records; involving formal documentation and approval; incorporate consideration of timing and locations of burns; include resource requirements
- Resources may include: personnel; equipment to initiate burn and related back-burning; personal protective equipment; standby fire extinguishing units; barriers to exclude visitors; radio communication equipment; field water supplies
- Burn must comply with fire laws of; relevant agencies; State and Territories; Local Government; emergency fire service; parks/reserves; wildlife protection acts
- Burn may be required to achieve: management of flora and fauna including threatened species; regeneration of species; removal of weeds; to initiate growth and seeding of flora e.g. grasses used for animal or human food
- Communication may include: consultations with various agencies; consultations with stakeholders; advice to emergency services of plans; instructs and briefing of staff of plans and related emergency arrangements.

Evidence Guide

Critical aspects of evidence to be considered

Development of plan to maximise resource management benefits; Risk assessment of burning and management of risks.

Interdependent assessment of units

Assessment of competency in this unit may be combined with other units at the request of person being assessed where this is convenient to the workplace and assessment process.

Underpinning knowledge

- The life cycles of flora and fauna of parks/reserves and effect of prescribed burning
- The dependence of the terrestrial ecosystems on fire
- Emergency fire services
- Radio communication
- Effects of fire on human physiology.

Underpinning skills

- Identify specific situations requiring prescribed burns
- Ignite and extinguish fire to prescribed burn plan
- Work to a prearranged plan for the burn
- Understand fire behaviour and fight fires
- Develop plans.

Resource implications

These competencies are primarily demonstrated in the workplace either as an individual or as a member of a team. Some aspects may be assessed on the basis of field notes and reports over time.

Consistency in performance

Assessment of consistency may be obtained from field notes and records, and evidence provided by supervisors and peers.

Context of assessment

Competency should be assessed in the workplace or simulated workplace environment.

Prescribed burning is an essential tool in the maintaining of species and of excess fuel control in forests. This work needs to be carried out with the strictest controls so that the desired result is obtained and that personal and property risks are minimised.

Key Competencies and Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing and organising information		•	
Communicating ideas and information			•
Planning and organising activities			•
Working with others in teams		•	
Using mathematical ideas and techniques		•	
Solving problems			•
Using technology		•	

FPINCR034A Utilise burning for natural and cultural resource management

Description

This is an industry-endorsed unit of competence within the Natural and Cultural Resource Management National Competency Standards.

Prescribed burning may be used for regeneration and/or fuel reduction.

1 Protect life and property

- 1) Burn is implemented according to the plan.
- 2) Visitors are excluded from target areas, entertainment areas and areas possibly affected by smoke or risk from escaping fire.
- 3) Field workers are instructed in burn and safety procedures to conduct the burn using the ICS system.
- 4) Neighbours and agencies are advised of the intention to burn to ensure safety and maintain client relations.
- 5) Cultural sites, assets and entertainment areas are protected according to fire industry practices.
- 6) Fire breaks are applied to the area to maintain control of the fire and burn intensity.
- 7) Standby fire units are available to control unexpected outbreaks.

2 Burn defined areas

- 1) Weather forecasts and current weather conditions are assessed to determine appropriate conditions and timing for burn.
- 2) Fire is applied to targeted areas to organisation requirements.
- 3) Area is checked to ensure all portions intended have received required burn.
- 4) Assessment of burn is completed and recorded to organisation procedures.
- 5) Area burnt is monitored to organisation procedures to avoid wildfire outbreaks.

Range of Variables

- The place/area may include: State Forest; a declared park/reserve under State/Territory or Commonwealth legislation; leasehold crown lands privately owned park/reserve; privately owned land where State/Territory or Commonwealth land management; conservation or parks/reserves legislation applies; a discrete place of potential or known natural resource significance
- Natural resources are those indigenous species, ecological processes, geophysical areas and water resources of value within the organisation's area of responsibility
- Plan for burn may be: local; incorporated in a park/reserve management plan; covered by internal organisation memos and records; involving formal documentation and approval; incorporate consideration of timing and locations of burns; include resource requirements
- Burn must comply with fire laws of: Relevant agencies; State and Territories; Local Government; Emergency fire service; Parks/reserves; Wildlife protection acts
- Resources may include: personnel; equipment to initiate burn and related back-burning; personal protective equipment; standby fire units; barriers to exclude visitors; radio communication equipment; field water supplies
- Burn may be required to achieve: Management of flora and fauna including threatened species; Regeneration of species; Removal of pest flora e.g. gawze, blackberry; Removal of unwanted grasses; To initiate growth and seeding of flora e.g. grasses used for animal or human food
- Fire is limited to areas such as undergrowth and within a limited controllable area at any time
- Communication may include: consultations with various agencies; advice to emergency services of plans; attendance and participation in briefing on plans and related emergency arrangements; use of radio and other electronic communications.

Evidence Guide***Critical aspects of evidence to be considered***

- Ability to control burning operations
- Protection of life and property during burning
- Correct intensity of burn achieved.

Interdependent assessment of units

Assessment of competency in this unit may be combined with other units at the request of person being assessed where this is convenient to the workplace and assessment process.

Underpinning knowledge

- The life cycles of flora and fauna of forests/plantations and effect of burning operations
- Required intensity of fire
- The dependence of the terrestrial ecosystems on fire
- Emergency fire services
- Radio communication
- Effects of fire on human physiology.

Underpinning skills

- Identify specific situations requiring burns for natural and cultural resource management
- Ignite and extinguish fire to prescribed burn plan
- Plan and manage projects
- Work to a prearranged plan for the burn
- Understand fire behaviour and fight fires.

Resource implications

These competencies are primarily demonstrated in the workplace either as an individual or as a member of a team. Some aspects may be assessed on the basis of field notes and reports over time.

Consistency in performance

Assessment of consistency may be obtained from field notes and records, and evidence provided by supervisors and peers.

Context of assessment

Competency should be assessed in the workplace or simulated workplace environment. Burning is an essential tool in the maintaining of species and of excess fuel control in forests.

FPINCR034A Utilise burning for natural and cultural resource management

Key Competencies and Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing and organising information		•	
Communicating ideas and information			•
Planning and organising activities			•
Working with others in teams		•	
Using mathematical ideas and techniques		•	
Solving problems			•
Using technology		•	

Description

This is an industry-endorsed unit of competence within the Natural and Cultural Resource Management National Competency Standards.

This unit applies to some forests in remote areas and/or to staff travelling in these areas.

1 Apply location finding and navigation skills

- 1) Current location in forest, reserve or other area is determined using available resources.
- 2) Geographic location is found using available resources during travel and during any emergencies.
- 3) Route to destination and assistance is determined from maps, identification of surface features, astral navigation, global positioning systems and/or compass, and marine navigation aids.

2 Travel in remote areas

- 1) Travel plans are determined to suit objectives.
- 2) Travel plans are assessed in terms of local travel conditions as obtained from informed sources.
- 3) Travel plans are communicated to appropriate personnel to ensure a search is instigated in case of delay.
- 4) Provisions and equipment packed are appropriate to travel plans and potential emergencies.
- 5) Mode of transport and appropriate emergency equipment is checked and packed before travel commences.
- 6) Driving technique is appropriate to weather and surrounding conditions.
- 7) Navigation is appropriate to remote area conditions.
- 8) Communication equipment is used to advise progress and location and to obtain assistance when required.
- 9) Travel complies with Occupational health and safety requirements and organisation procedures.

3 Conserve resources

- 1) Provisions are managed to last the expected travel duration and any emergencies.
- 2) In the event of emergencies and/or delays, provisions and other resources are used at a rate that sustains party and if possible lasts until end of delay or emergency.

4 Apply emergency living procedures

- 1) Remote area survival techniques are used to improve living conditions or to manage emergencies or delays.
- 2) Wild food is obtained to supplement resources.
- 3) Water is obtained from natural sources or distilled from available resources.
- 4) Shelter is used or erected to obtain protection from elements.
- 5) Situation is assessed to determine if party remains in location where it can be found by searchers.
- 6) Party provides directions to assist searchers to locate them.

Range of Variables

- Location may be: on land, in open, hilly or in dense growth; on rivers, lakes or sea; on islands; in temperate, tropical, arid, sub-temperate, antarctic or cold mountainous climates
- Objectives may include: identification of natural and/or cultural significance; monitoring of places and areas; visitor management; completion of works, such as fencing, roads, water supply, interpretation and signage, coast protection, patrolling of reefs, islands, waters; pest management; fire management; search and rescue
- Available resources may include maps, GPS instruments, compass, radio, mobile telephone, astral navigation, nearby inhabitants, survey markers, trig points
- Emergency equipment may include: first aid supplies; vehicle spare parts and repair tools; retrieval equipment such as ropes, winches, hand tools; chain saws; communication equipment; emergency beacons and other location finding devices
- Travel may be by two or four wheel drive vehicle, air, or by foot
- Provisions are food, water, first aid supplies
- Written documentation may include: organisation procedures for remote area operations; maps, charts and other related documents; writing logs and other notes; operating procedures for equipment
- Search and rescue may include: remote land travel; search and rescue at sea, on lakes or rivers; floods including road and path washaways; earth slips, cliff collapse, mud slides; resulting from storms; fire; accidents
- Emergency management may include: the application of first aid; use of communications to seek assistance; directions for aircraft, helicopters and vehicles
- Communication equipment may include: two way radio; mobile radio; satellite radio/phone.
- Packing is for stability and security of loose items
- Informed sources are those people and organisations possessing road and weather information and may include: parks/reserves personnel; police; weather bureau; newspapers, radio and television stations; transport departments; other local inhabitants
- Emergencies may include those within the party and others and may be: vehicle breakdowns; illnesses; accidents, such as falls, caused by animals, reptiles, birds, invertebrates, vehicle, aircraft, sinking of vessels, diving; lost people or animals
- Remote area survival techniques may include: remaining with transport; determining location; seeking protection from sun, heat, wind, cold, ice, snow, water, animals, reptiles; conservation of energy; searching nearby for food and water sources; distillation of water using emergency equipment; setting out beacons, signs and lighting fires; radioing emergency messages
- Shelter may be obtained in vehicle, under trees, caves or cliff, or by building a structure from natural materials
- Wild food may include roots and stems, grass and plant seeds, berries, nuts, fungi and sap
- Water sources may be located by: game trails and animal tracks, bird flight, beehives; searching cracks in rocks, at the base of cliffs or dunes; searching and digging in water courses; within some plants
- Communication may include: between working party; through the use of communication equipment, using appropriate procedures.

Evidence Guide***Critical aspects of evidence to be considered***

Competency is to be assessed in the critical aspects of:

- Position location in different terrains and weathers
- Navigation in different terrains associated with workplace using different navigation methods
- Emergency communications, both sending and receiving
- Emergency procedures across a range of typical emergencies
- Planning and execution of travel plans from beginning to return to base
- Conservation of travelling resources
- Remote area survival techniques, including gathering of food and water, and protection from elements.
- Notification of travel plans.

Interdependent assessment of units

Assessment of competency in this unit may be combined with other units at the request of person being assessed and where the assessor is able to plan combined opportunities for evidence gathering.

Underpinning knowledge

- Area of travel
- Resource requirements for travel in various areas and for different purposes
- Search and rescue procedures
- Rules for survival in remote areas in various temperatures and weathers likely to be encountered
- Rules for operation of aeroplane and helicopters
- Weather and conditions where travel plans should be changed.

Underpinning skills

- Operate radio and mobile equipment
- Operate GPS equipment, compasses
- Locate position by stars
- Operate emergency equipment
- Travel safely by vehicle
- Pack equipment in vehicle safely and securely.

Context of assessment

Competency should be assessed in the workplace or simulated workplace environment.

Emergency related competencies should be assessed in a realistic simulated environment.

Description

This is an unit from the Metalliferous sector of the Mining Industry.

This unit applies in all contexts to the organisation and direct seeding of forests.

1 Organise for direct seeding

- 1) Briefing, handover details, authorisation and clearances are received, interpreted and clarified in accordance with site procedures and regulations.
- 2) Appropriate type of equipment and/or attachments are selected according to job type and specifications to maximise efficiency and effectiveness of work activities.
- 3) Appropriate materials are selected according to site conditions and planting schedule.
- 4) Species to be sown is selected and approval obtained if necessary.
- 5) Potential risks and hazards are identified and managed according to the work plan to ensure safe and efficient seeding in accordance with site procedures and regulations, occupational health and safety and other relevant legislation.
- 6) Personal protective equipment is selected and used in accordance with manufacturers' guidelines, site procedures and regulations, organisations occupational health and safety and other relevant legislation.
- 7) Equipment pre-operational checks are performed according to manufacturers' specifications, site procedures, regulations, occupational health and safety and other relevant legislation.
- 8) Site environmental and heritage concerns are adhered to according to relevant legislation.

2 Conduct direct seeding operations

- 1) Direct seeding method ensures total coverage of specified area avoiding patchy plant coverage according to planting plan and environmental guidelines.
- 2) Direct seeding equipment and techniques minimise disturbance to site.
- 3) Seeding activities fall within appropriate season and growing conditions.
- 4) All required records and documentation are completed accurately and promptly indicating result of seeding activities in accordance with site requirements.
- 5) Seeding and any fertilising activities are carried out according to site conditions, flora type, rehabilitation plan and environmental guidelines.

3 Conduct housekeeping activities

- 1) Equipment is cleaned in accordance with manufacturers' specifications, site procedures and regulations.
- 2) Attachments and other ancillary equipment are cleaned and stored in accordance with manufacturers' specifications, site procedures and regulations.
- 3) All required records and documentation are completed accurately and promptly in accordance with site requirements.

Range of Variables

- Briefing may include information relating to: planting rate; species; incorporation of fertiliser; incorporation of weed retardant; incorporation of germination enhancer
- Site procedures and regulations may be found in: operations manual, induction documentation, training materials, policy and procedures documents, verbal or written instructions
- Manufacturers' specifications may be found in: printed instruction leaflets, operators manuals, equipment specifications, attached to the equipment
- Safety issues/hazards may include: round condition; sun/wind; aerial hazards; dead/burnt trees/limbs; hang-ups; pine cones; insects
- Personal protective equipment may include: safety helmet (hard hat), safety boots, safety harness when working at heights, gloves (plastic, rubber, leather), eye protection, hearing protection, respirator (disposable, cartridge/filter respirators), protection from the elements (calico neck flaps, sun screen lotion 15+, tinted safety glasses, loose fitting light cotton shirt and trousers, wet weather trousers and jackets)
- Protective equipment may include: fire extinguishers (water, foam, dry chemical power, carbon dioxide), barricades, out of service tags, danger tags
- Safe operating procedures may include: adhering to all site procedures, observing site speed limits, working safely around other machines and personnel, observing right of way in incline and decline, wearing of seat belts, use of the self-rescue device, respiratory devices, hazard identification and recognition procedures, awareness and access to escape ways, emergency procedures, observation of electrical and mechanical procedures, first aid
- Site environmental and heritage concerns may include: dust, noise, water, flora and fauna, heritage legislation, culturally sensitive sights and artefacts
- Equipment may include: hand-held and mechanised seeding equipment, aircraft (helicopter, fixed winged craft)
- Materials may include: seeds, fertiliser, chemicals; seed capsules
- Site conditions may include: wet, dry, day, night, stability of ground, broken ground, stable ground (compaction) amount of scale, slope of working surface, degree of compaction, location of water table
- Weather conditions may include: strong winds, storms (hail, electrical), cyclones, rain, dry, heat, floods
- Documentation required may include: that which provides sufficient evidence for contract payments; eg; logbooks; preparation and amendment of site maps and plans
- Legislation, regulations, standards may include: Environmental Protection Act; Environmental Agencies regulations; duty of care; isolation procedures; occupational health and safety legislation; site regulations and procedures; Australian Standards; manufacturer's specifications and recommendations; State code of forest practice or equivalent; statutory requirements; Trade practices act; traditional land owners requirements.

Evidence Guide*Assessment Statement:*

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety, environmental damage are limiting factors.

All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

Competency Statement:

evidence of competency is best obtained by observing activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practicable, observations in a realistic simulated environment may be substituted and/or written examinations and tests.

Critical underpinning knowledge:

- Site procedures
- Environmental and heritage procedures
- Occupational health and safety procedures
- Emergency procedures
- Site safety requirements
- Equipment safety requirements
- Start up procedures, operational procedures and checks, equipment start up, shut down and operational procedures and checks, shutdown procedures
- Equipment processes, technical capability and limitations
- Fertiliser characteristics and application methods
- Seeding methods
- Species identification.

Critical underpinning skills

- Communications (written, verbal, signalling)
- Mathematical calculations (timing, quantities)
- Follow instructions
- Use communications equipment
- Team work
- Interpretation of plans, reports, maps, specifications
- Plan and document reading
- Maintain records
- Interpret ground conditions
- Organise work tasks
- Report defects
- Select and use fit personal and protective equipment
- Safe work practices
- Hazard identification
- Hazardous goods handling techniques
- Equipment operation, maintenance (minor), cleaning
- Ancillary equipment operation, maintenance, cleaning
- Use relevant hand tools
- Equipment adjustment
- Seed application (machine or hand).

Description

This unit describes the work required to undertake forest operations in a way that minimises environmental degradation.

Suggested Pre-Requisite

FPI OHS 1A Follow defined occupational health & safety policies & procedures.

1 Maintain work site in clean and safe condition

- 1) Occupational health & safety and fire procedures, practices, policies, and precautions are observed and followed at all times.
- 2) Work site requirements for location, storage and disposal of equipment, materials and chemicals, are identified from enterprise procedures or approved environment management system.
- 3) Work site is maintained in a clean and safe condition according to site procedures or approved environmental management system.
- 4) Work site rehabilitation requirements are identified from site procedures or the approved environmental management system.
- 5) Work site is rehabilitated according site procedures or as required by the approved environmental management system.
- 6) Communication with others involved with the work is established and maintained to ensure efficient work flow co-ordination, personnel co-operation and safety throughout the application of this competency.

2 Protect water courses and key protection areas

- 1) Code of practice, logging plan or other plans or instructions, concerning water course and key protection area use, and environmental & heritage concerns are followed.
- 2) Oils, greases and chemicals are not allowed to enter watercourses or key protection areas.
- 3) Vegetation or dirt disturbed during forest operations is not allowed to enter watercourse channels or key protection areas.
- 4) Earthworks are undertaken with minimal disturbance, particularly to existing spring, stream, drainage line, or dam.

3 Follow wet and dry weather road and work site procedures

- 1) Site environmental and heritage concerns are adhered to in accordance with site procedures or the approved environmental management system.
- 2) Work site or travel routes are evaluated against site standards while working to ascertain whether the surface is deteriorating or breaking up.
- 3) Forest operations are halted or modified in conditions where unacceptable deterioration of the road or site is likely
- 4) Haul/slug/travel routes which do not cause damage or disturbance in built up areas or other sites of cultural/landscape significance, are used.
- 5) Drainage discharge from works is dispersed according to organisation requirements into the prescribed zone.

Range of Variables

- Environmental protection measures are those established under legislation and enterprise policies and they may be contained in government publications, site procedures or an approved environment management system.
- Work sites and travel routes include roads, tracks, snig tracks, log landings, camps, storage dumps, depots, new earth works and any location where operations are being carried out.
- Work site materials, equipment and chemicals may include oils, greases, industrial chemicals, drums containers and contaminated dirt.
- Existing drainage may be natural or man made.
- Key protection areas may include water quality protection zones, wildlife corridors, and special exclusion zones.
- Location & types of information regarding requirements of key protection areas may include colleagues, forest coupe plan or similar, code of practice or similar, and organisational prescription
- Road or work site deterioration may include deep mud, drainage defects, bulldust and breaking up the road surface.

Evidence Guide*Underpinning Knowledge*

- Explains:
 - ◇ location & types of information regarding requirements of work sites and key protection areas
 - ◇ relationship between the relevant State-based forest code of practice, harvest planning documentation and associated guidelines, any relevant regional forest agreements and the approved environmental management system and procedures
 - ◇ the purpose and impacts of the relevant State based forest code of practice, harvest planning documentation and associated guidelines and environmental management system
 - ◇ organisation disposal procedures for equipment, materials, chemicals and dirt which is contaminated as a result of forest operations.

Underpinning Skills

- Demonstrates the ability to:
 - ◇ apply disposal procedures for unwanted greases, oils, chemicals, contaminated dirt or equipment
 - ◇ interpret information to workplace requirements
 - ◇ interpret and implement relevant portions of the relevant State-based forest code of practice, associated guidelines and environmental management system
 - ◇ establish communication procedures within the workplace
 - ◇ organise information to get the desired result.

Critical Aspects of Evidence

- Assessment must confirm the application of appropriate knowledge and skills to:
 - ◇ safely apply environmental protection measures
 - ◇ locate, interpret and apply relevant information in written diagrammatic and/or oral form
 - ◇ convey information in written, sketch and oral form
 - ◇ interpret and apply common industry terminology
 - ◇ maintain the work site in a clean and safe condition
 - ◇ protect water courses and key protection areas
 - ◇ follow wet and dry weather road and work site procedures

Interdependent Assessment of Units

This unit of competency is to be assessed in conjunction with other units which form part of a job role.

Assessment Context

This unit should be assessed in the workplace during the conduct of routine operational functions and tasks

Key Competencies & Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing & organising information	•		
Communicating ideas & information	•		
Planning & organising activities	•		
Working with others in teams	•		
Using mathematical ideas & techniques	•		
Solving Problems	•		
Using technology	•		

Description

This unit describes the work involved in the cleaning, checking and adjustment of the saw and the sharpening of the chain.

Suggested Pre-Requisite

FPI OHS 1A Follow defined occupational health & safety policies & procedures.

1 Clean and check saw components

- 1) Occupational health & safety regulations, policies & procedures relevant to maintaining chainsaws are to be followed throughout the application of this competency.
- 2) Chainsaw and chainsaw body are cleaned and inspected to determine condition.
- 3) Air filter is removed, cleaned, checked and replaced or reinserted.
- 4) Spark plug is removed, condition checked and replaced or reinserted.
- 5) Chain tension is checked and adjusted as required.

2 Check and adjust chain

- 1) Guards/bars are loosened/removed to provide access to adjustment.
- 2) Tension is adjusted to specification.
- 3) Guards/bars are replaced to manufacturer's instructions.

3 Replace worn chain/depth gauges

- 1) Each tooth of chain is checked for condition.
- 2) Worn sprockets/chain is replaced to manufacturer's instructions.

4 Sharpen chain

- 1) Chainsaw is set-up in position for filing/grinding.
- 2) Each chain is sharpened to manufacturer's instructions.

Range of Variables

- Sharpening methods may include grinder and hand filing.
- Chainsaws may be engine and electric.
- OH&S requirements include manual handling, use of protective clothing and safety equipment, machine guarding, operation of equipment and site safety policies and procedures.

Evidence Guide

Underpinning Knowledge

- Explains:
 - ◊ OH&S regulations, policies and procedures for maintaining chainsaws
 - ◊ various types of chainsaws and uses
 - ◊ chainsaw maintenance procedures
 - ◊ the importance of accuracy.

Underpinning Skills

- Demonstrates ability to:
 - ◊ safely and effectively maintain chainsaws
 - ◊ apply chainsaw maintenance procedures and techniques
 - ◊ locate, interpret and apply relevant information
 - ◊ convey information in oral form.

Critical Aspects of Evidence

- Assessment must confirm the application of appropriate knowledge and skills to:
 - ◊ safely maintain chainsaws
 - ◊ communicate effectively with others in associated areas
 - ◊ clean and check chainsaw components
 - ◊ check and adjust chain
 - ◊ replace worn chain/depth gauges
 - ◊ sharpen chain.

Interdependent Assessment of Unit

This unit of competency may be assessed in conjunction with other units which form part of a job role.

Assessment Context

This unit may be assessed in the workplace or under conditions which accurately simulate a realistic workplace.

Key Competencies & Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing & organising information	•		
Communicating ideas & information	•		
Planning & organising activities	•		
Working with others in teams	•		
Using mathematical ideas & techniques	•		
Solving Problems	•		
Using technology	•		

Description

This unit describes the work involved in the preparation and cutting of materials with a hand held chainsaw.

Suggested Pre-Requisite

FPI OHS 1A Follow defined occupational health & safety policies & procedures.

1 Prepare material for sawing

- 1) Occupational health & safety regulations, policies & procedures relevant to cross-cutting materials with a hand held chainsaw are to be followed throughout the application of this competency.
- 2) Material to be prepared is identified in accordance with site procedures.
- 3) Surfaces are cleared of debris likely to cause saw damage in cutting area.
- 4) Debris is regularly cleared and deposited in recognised areas.
- 5) Problems that arise are recognised and reported in accordance with site procedures.
- 6) Communication with others involved with the work is established and maintained to ensure efficient work flow co-ordination, personnel co-operation and safety throughout the application of this competency.

2 Cross-cut material

- 1) Material to be cross-cut is visually assessed for defects.
- 2) Cutting positions selected satisfy orders and industry standard lengths.
- 3) Cutting patterns are selected to maximise volume and quality of recovery.
- 4) Area is checked to ensure saw clearance around the material.
- 5) Section on each side of planned cut is secured.
- 6) Saw is operated in accordance with site standards.
- 7) Cutting procedures minimise capping and splitting of material.
- 8) Material is cut within site standard tolerances for length and angle relative to centre line.
- 9) Records are maintained in accordance with site procedures.
- 10) Off-cuts and shorts are regularly cleared and deposited in recognised areas.
- 11) Problems that arise are recognised and reported in accordance with site procedures.

3 Maintain chainsaw

- 1) Saw is checked to relevant standards prior to use.
- 2) Cutting rate is compared with that anticipated from knowledge of saw, size of material, species and condition.
- 3) Saw is sharpened and adjusted to maintain cutting rate.
- 4) Sawing problems that arise are recognised or reported in accordance with site requirements.

Range of Variables

- Materials are cut on a relatively level and clear surface and not under forest conditions.
- Materials may include logs and packs of timber.
- Timber cut may be hardwood or softwood.
- Materials sawn may cover a wide range in size and weight, some of which will necessitate use of lifting equipment.
- Production and Quality records may include tally sheets, quality sheets/forms, production sheets and downtime sheets.
- OH&S requirements include manual handling, protective clothing, elimination of hazards, use of chainsaws, use of hand tools and site safety policy.

Evidence Guide

Underpinning Knowledge

- Explains:
 - ◇ OH&S regulations, policies and procedures for cross-cutting materials with a hand held chainsaw
 - ◇ the effects of defects on recovery
 - ◇ the operating and maintenance requirements of a chainsaw
 - ◇ industry standard length dimensions
 - ◇ the importance of accuracy
 - ◇ the purpose of record keeping.

Underpinning Skills

- Demonstrates the ability to:
 - ◇ safely cross-cut the full range of material with a hand held chainsaw
 - ◇ maximise volume and quality recovery
 - ◇ safely operate and maintain a chainsaw
 - ◇ locate, interpret and apply relevant information
 - ◇ convey information in oral form
 - ◇ select appropriate mathematical process
 - ◇ interpret and apply common industry terminology.

Critical Aspects of Evidence

- Assessment must confirm the application of appropriate knowledge and skills to:
 - ◇ safely cross-cut materials with a hand held chainsaw
 - ◇ communicate effectively with others in associated areas
 - ◇ apply mathematical procedures such as estimation and measurement
 - ◇ prepare material for sawing
 - ◇ cross-cut material to maximise volume and quality recovery
 - ◇ maintain the chain saw.

Interdependent Assessment of Unit

This unit of competency may be assessed in conjunction with other units which form part of a job role.

Assessment Context

This unit may be assessed in the workplace or under conditions which accurately simulate a realistic workplace.

Key Competencies & Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing & organising information	•		
Communicating ideas & information	•		
Planning & organising activities	•		
Working with others in teams	•		
Using mathematical ideas & techniques	•		
Solving Problems	•		
Using technology	•		

Description

This unit describes the work required to facilitate operations involving others while taking care of environmental imperatives.

Suggested Pre-Requisite/Co-Requisite

FPI OHS 1A	Follow defined occupational health & safety policies & procedures.
FPI G23 A	Plan a complete activity.
FPI G41 A	Use basic hand held tools.

1 Locate key protection area(s)

- 1) Occupational health & safety & fire procedures, practices, policies, & precautions are observed & followed.
- 2) Site environmental & heritage concerns are adhered to in accordance with relevant organisational guidelines.
- 3) Key protection area is located in the field in accordance with organisational procedures.
- 4) Purpose & type of key protection area is identified from available information in accordance with organisational procedures.
- 5) Key protection area is marked in the field in accordance with organisational procedures & common industry practice.
- 6) Work is carried out without infringing on key protection area integrity.

2 Locate and mark trees for retention

- 1) Occupational health & safety & fire procedures, practices, policies, & precautions are observed & followed.
- 2) Site environmental & heritage concerns are adhered to in accordance with relevant organisational guidelines.
- 3) Purpose & type of tree is identified from available information in accordance with organisational procedures.
- 4) Tree is marked or identified in the field in accordance with organisational procedures & common industry practice.
- 5) Prescribed exclusion zone is maintained around tree & work is carried out without infringing on tree integrity.

3 Service machinery within environmental constraints

- 1) Occupational health & safety & fire procedures, practices, policies, & precautions are observed & followed.
- 2) Site environmental & heritage concerns are adhered to in accordance with relevant organisational guidelines.
- 3) Location of fuel dumps is determined in consultation with appropriate personnel or authority.
- 4) Servicing of machinery is located at prescribed distance from any stream, soak, swamp or body of standing water .
- 5) Waste material is removed from the forest for disposal in accordance with organisation environmental care guidelines & not buried or left on site.

4 Select & use camp sites within environmental constraints

- 1) Occupational health & safety & fire procedures, practices, policies, & precautions are observed & followed.
- 2) Site environmental & heritage concerns are adhered to in accordance with relevant organisational guidelines.
- 3) Camp sites are located at the prescribed distance from any spring, stream or dam.
- 4) Direct discharges of any waste water does not enter any stream.
- 5) Camp site is maintained clear of rubbish at all times.
- 6) Sanitary conveniences are located at the prescribed distance from any spring, stream, drainage line, or dam.

5 Conduct earthworks associated with regeneration operations within environmental constraints

- 1) Occupational health & safety & fire procedures, practices, policies, & precautions are observed & followed.
- 2) Site environmental & heritage concerns are adhered to in accordance with relevant organisational guidelines.
- 3) Works are undertaken with minimal disturbance to existing spring, stream, drainage line, or dam.
- 4) Side cast material is placed where it will not enter streams.
- 5) Drainage discharge from works is dispersed into the prescribed zone.
- 6) Cross drainage structures are restored on tracks in accordance with supervisor's instructions.
- 7) Communications with supervisor and crew are maintained to ensure effective planning of renovation / regeneration.

6 Suspend cartage and access

- 1) Occupational health & safety & fire procedures, practices, policies, & precautions are observed & followed.
- 2) Site environmental & heritage concerns are adhered to in accordance with relevant organisational guidelines.
- 3) Conditions for the suspension of cartage & access are recognised from organisation guidelines & procedures.
- 4) Where necessary, supervisor is informed of conditions which force the suspension of cartage & access.
- 5) Communications with supervisor and crew are maintained to ensure effective conduct of works.

7 Undertake timber production work within environmental constraints

- 1) Occupational health & safety & fire procedures, practices, policies, & precautions are observed & followed.
- 2) Site environmental & heritage concerns are adhered to in accordance with relevant organisational guidelines.
- 3) Timber production work is undertaken in accordance with organisation & local codes & guidelines.
- 4) Timber production work is undertaken in accordance with legislative & regulatory requirements.

Range of Variables

- Appropriate authority for approval of locating fuel dumps may include supervisor or external authority.
- Existing drainage may be natural or man made.
- Key protection areas may include water quality protection zones, wildlife corridors and special exclusion zones.
- Organisational guidelines will be in line with relevant national, state & local legislation and/or regulations.
- Location & types of information regarding requirements of key protection areas may include colleagues, forest coupe plan or similar, code of forest practice or similar and organisation prescription.
- Trees for retention may include habitat trees, seed trees and specimen trees.
- Waste material from machinery servicing may include waste oil, empty drums and containers.
- Drainage discharge from works may be discharged to undisturbed vegetation at a prescribed distance from works.
- Cartage & access may be suspended during wet weather when the disturbance of the road surface poses a threat to stream water quality, when there is damage to the structural integrity of road, during dry weather when continued use poses a threat to stream water quality and under other conditions prescribed in organisation guidelines / procedures.

Evidence Guide

Underpinning Knowledge

- Explains:
 - ◇ location & types of information regarding requirements of key protection areas
 - ◇ relationship between the relevant State-based forest practice code, harvest planning documentation and associated guidelines and any relevant regional forest agreements
 - ◇ the purpose and impacts of the relevant State-based forest practice code, harvest planning documentation and associated guidelines
 - ◇ elements of an environmental management system
 - ◇ objectives of the organisation's environmental management policy (ies)
 - ◇ relationship of organisation's environmental management policy (ies) to organisation's marketing plan.

Underpinning Skills

- Demonstrates the ability to:
 - ◇ follow instructions
 - ◇ interpret information to workplace requirements
 - ◇ interpret & implement relevant portions of the relevant State-based forest practice code and associated guidelines
 - ◇ locate, interpret and apply relevant information in written, diagrammatic and/or oral form
 - ◇ convey information in written, sketch and/or oral form
 - ◇ interpret and apply common industry terminology
 - ◇ select appropriate mathematical processes including addition, subtraction, multiplication, division and trigonometry.

Critical Aspects of Evidence

- Assessment must confirm the application of appropriate knowledge and skills to:
 - ◊ safely work within environmental constraints
 - ◊ locate, interpret and apply relevant information in written, diagrammatic and/or oral form
 - ◊ convey information in written, sketch and oral form
 - ◊ interpret and apply common industry terminology
 - ◊ access, interpret, assess and apply technical information
 - ◊ locate key protection areas
 - ◊ locate and mark trees for retention
 - ◊ service machinery within environmental constraints
 - ◊ select and use camp sites within environmental constraints
 - ◊ conduct earthworks within environmental constraints
 - ◊ suspend cartage and access
 - ◊ undertake timber production work within environmental constraints.

Interdependent Assessment of Units

This unit of competency is to be assessed in conjunction with other units which form part of a job role.

Assessment Context

This unit should be assessed in the workplace during the conduct of routine operational functions and tasks.

Key Competencies & Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing & organising information		•	
Communicating ideas & information	•		
Planning & organising activities		•	
Working with others in teams	•		
Using mathematical ideas & techniques	•		
Solving Problems	•		
Using technology	•		

Description

This unit of competency is concerned with the implementation of conservation practices to contribute to sustainable forest management practices.

Suggested Pre-Requisites/Co-Requisites

FPI OHS 1A	Follow defined occupational health & safety policies & procedures.
FPI G24 A	Plan a complex activity
FPI G29 A	Solve problems in the workplace - advanced

1 Prepare and implement strategies

- 1) Financial resources are identified and allocated for environmental management within the organisation.
- 2) Environmental management strategies are developed using available resources and in accordance with management policies and legislative requirements.
- 3) Strategies are assessed for their effectiveness in reducing waste disposal from the organisation in accordance with management policies and sound environmental management practice.
- 4) Changes to environmental management strategies are implemented to ensure ongoing waste reduction, and energy and water efficiency, to take advantage of newly available technologies.

2 Manage integrity of water bodies

- 1) Water is sourced from locations other than mains water, where possible and appropriate, for its use in accordance with management policies and legislative guidelines.
- 2) Run-off water is managed to optimise its use and minimise pollutants entering the river and drainage systems, where appropriate and sound environmental management practice.
- 3) Planting strategies are developed to efficiently & appropriately use available water supply, and take into consideration run-off implications.
- 4) Irrigation/watering strategies are developed to minimise evaporation, run-off and inaccurate delivery of water in accordance with management policies and sound environmental management practice.

3 Manage integrity of soil

- 1) Planting patterns & species contribute to the minimisation of wind & water erosion & are in accordance with organisational policies & standards.
- 2) Nutrients & texture of the soil are managed to maintain soil productivity in accordance with industry and organisational policies & standards.
- 3) Irrigation / watering strategies are developed to minimise evaporation, run-off and inaccurate delivery of water in accordance with management policies and sound environmental management practice.

4 Undertake an environmental audit

- 1) Requirement for an audit is identified from organisational policies & plans.
- 2) Where an audit is undertaken, it takes into consideration
 - topography
 - water use
 - current policies and practices
 - waste emissions and materials
 - energy use
 - characteristics of area and
 - legal obligations
- 3) Report is prepared in accordance with industry practice and client / management requirements.

Range of Variables

- Adjoining water bodies may be permanent or ephemeral.
- Alternate energy sources may include wind generators, solar generators, solar tubing, water generators and airflow.
- Appropriate bodies for consultation may include statutory bodies, council, consultants and governments.
- Characteristics of area may include climate, heritage, geology, ambience and vegetation.
- Elements for inclusion in buildings and structures may include self-composting toilets, windbreaks, location and construction of windows, building materials, orientation of building or structure, planting surrounding the building or structure, use of colour and cavity sizes.
- Waste types may include paper, plastics, metals, green waste, chemical, glass and construction waste.
- Waste water management systems may include self-composting toilets, septic tanks and sewerage lagoons.
- Legal obligations may include local government, state, federal government, regulations, by-laws, body corporate agreements and title restrictions/encumbrances.
- Emissions/discharges may include noise, light, odour, gas, smoke, vapour, liquids and solids, particulates and fumes.
- Run-off may be from watering, irrigation systems, rain, stormwater, inefficient/defective drains and cooling systems.
- Management plan may include provision for the evaluation of environmental assets for insurance purposes.
- Occupational Health and Safety Issues may include the health and safety of workers who will be involved in activities associated with implementing sustainable horticultural strategies particularly in relation to chemical use, waste handling, composting, and equipment and machinery operation.

Evidence Guide

Underpinning Knowledge

- Explains:
 - ◇ legislative requirements including occupational health & safety, hazchem, duty of care, dangerous goods
 - ◇ energy flows and food webs
 - ◇ nutrient cycling
 - ◇ principles of sustainable agriculture systems
 - ◇ principles of composting and waste management
 - ◇ internal environmental control standards
 - ◇ soil testing processes and procedures and results interpretation.

Underpinning Skills

- Demonstrates the ability to:
 - ◇ recognise common diseases, pests, & nutrition deficiencies
 - ◇ prepare and implement strategies
 - ◇ minimise waste
 - ◇ conserve energy resources
 - ◇ manage water use
 - ◇ prepare an environmental audit
 - ◇ complete data, quality control & other documentation clearly & accurately
 - ◇ write reports & submissions where precise meaning is required
 - ◇ write in keeping with the demands placed on writing style by reporting format
 - ◇ prepare & write progress, summary & completion reports
 - ◇ prepare financial reports
 - ◇ analyse qualitative & quantitative data.

Critical Aspects of Evidence

- Assessment must confirm the application of appropriate knowledge and skills to:
 - ◇ safely implement sustainable forest practices
 - ◇ locate, interpret and apply relevant information in written, diagrammatic and/or oral form
 - ◇ convey information in written, sketch and oral form
 - ◇ interpret and apply common industry terminology
 - ◇ access, interpret, assess and apply technical information
 - ◇ produces appropriate documentation within a given time
 - ◇ prepare and implement strategies
 - ◇ manage integrity of water bodies
 - ◇ manage integrity of soil
 - ◇ undertake and environmental audit.

Interdependent Assessment of Units

This unit is to be assessed in conjunction with other functional or operational units which form part of a job role.

Assessment Context

This unit may be assessed in the workplace or under conditions which accurately simulate a realistic workplace.

Key Competencies & Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing & organising information		•	
Communicating ideas & information		•	
Planning & organising activities		•	
Working with others in teams		•	
Using mathematical ideas & techniques		•	
Solving Problems		•	
Using technology	•		

Description

This unit describes the work involved in the evaluation of logs and their grading and marking for segregation to achieve their best end use.

Suggested Pre-Requisite

FPI OHS 1A Follow defined occupational health & safety policies & procedures.

1 Identify requirements for log usage and grade

- 1) Potential usage of logs for highest grade timber products are identified.
- 2) Standards, specifications and lengths for all timber products are identified for each potential usage from orders, industry standards or supervisor's instructions.
- 3) Log and wood characteristics requiring evaluation are identified.

2 Prepare to evaluate log

- 1) Occupational health & safety regulations, policies & procedures relevant to the grading and marking of logs for segregation are to be followed throughout the application of this competency.
- 2) Logs to be graded/recovered are identified and confirmed in accordance with site procedures.
- 3) Stability of log and access for evaluation are assessed and corrected.
- 4) Communication with others involved with the work is established and maintained to ensure efficient work flow co-ordination, personnel co-operation and safety throughout the application of this competency.

3 Determine log grade or potential grade

- 1) Log species is identified and suitability for various log specification is determined.
- 2) Defects are systematically evaluated and compared to product specifications.
- 3) For saw logs, overall log defect is calculated using aids and compared to product specification.
- 4) Log is graded and directed to best end use in accordance with segregation guidelines.
- 5) Log is marked for grade and/or cutting in accordance with site standards, customer requirements and segregation guidelines.
- 6) Logs are cross-cut or cross-cutting is arranged as necessary to clarify grade decisions.
- 7) Logs which cannot be safely processed and/or evaluated are marked in accordance with standard procedures.
- 8) Communication with customers and other personnel is maintained to gain feedback on grading performance.
- 9) Situations arising with customers and/or other personnel over log grading decisions are resolved.

4 Measure and record logs

- 1) Logs are measured using callipers and/or a measuring tool to site and industry standards.
- 2) Log data is recorded accurately in accordance with site procedures.

Range of Variables

- Timber product range may include poles, piles, guiders, veneer, graded sawlog, non-graded sawlog and pulp.
- Characteristics considered may include, species, pipe, open pipe, discontinuous and irregular shaped pipes, loose gum veins, gum pockets and rings, termites and grubs, hearts out of centre, brown stain, rot, punk, cork or pith, black borer, black heart, straight shakes, shakes in spiral grain, overgrowth and doze pockets, small log pipe allowance, length, and non-allowable length defects.
- Allowable length defects may involve limbs, multiple length defects, burn scars, bumps, swellings, kinks and bends, straight splits, spiral grain and associated splits.
- Assessment is for the purpose of determining the best end use for logs according to segregation guidelines.
- Aids provided may be formulae, data tables and hand held programmable computer.
- OH&S regulations include codes of practice requirements including wearing of required personal protection and high visibility vest, manual handling requirements, maintenance of safe forest practices including location of other people and potential falling objects, required actions relating to forest fire, working alone requirements, recognition of hazards and required actions in bush and tree falling.

Evidence Guide*Underpinning Knowledge*

- Explains:
 - ◇ OH&S regulations, policies and procedures for grading and marking of logs for segregation
 - ◇ how logs are graded and segregated on the basis of species, size and characteristics
 - ◇ standards for defects and length dimensions
 - ◇ the importance of accuracy
 - ◇ the purpose of record keeping.

Underpinning Skills

- Demonstrates ability to:
 - ◇ safely grade and mark logs for segregation
 - ◇ locate, interpret and apply relevant information
 - ◇ convey information in oral form
 - ◇ select appropriate mathematical processes
 - ◇ interpret and apply common industry terminology
 - ◇ grade and segregate logs on the basis of species, size and characteristics across the full range required
 - ◇ optimise recovery to grade according to segregation guidelines
 - ◇ measure logs to site standards for accuracy
 - ◇ calculate log defects.

Critical Aspects of Evidence

- Assessment must confirm the application of appropriate knowledge and skills to:
 - ◇ safely grade and mark logs
 - ◇ communicate effectively with others in associated areas
 - ◇ apply mathematical procedures such as estimation and measurement
 - ◇ identify requirements for log usage and grade
 - ◇ prepare for log evaluation
 - ◇ determine log grade or potential grade
 - ◇ measure and record logs.

Interdependent Assessment of Units

This unit of competency may be assessed in conjunction with other units which form part of a job role.

Assessment Context

This unit may be assessed in the workplace or under conditions which accurately simulate a realistic workplace.

Key Competencies & Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing & organising information		•	
Communicating ideas & information	•		
Planning & organising activities	•		
Working with others in teams	•		
Using mathematical ideas & techniques	•		
Solving Problems	•		
Using technology	•		

Description

This unit describes the work involved in the requirements of maintaining equipment in a forest environment at the basic level.

Suggested Pre-Requisite

FPI OHS 1A Follow defined occupational health & safety policies & procedures.

1 Perform routine checks, filling and lubrication

- 1) Occupational health & safety regulations, policies & procedures relevant to maintaining equipment at a harvesting site are to be followed throughout the application of this competency.
- 2) Equipment checking, filling and lubrication requirements are identified and confirmed.
- 3) Contamination of fluids is prevented during, handling, checking, filling and lubrication processes.
- 4) Checks, filling and lubrication are undertaken with minimum disruption to harvesting activities in accordance with manufacturers' recommendations and procedures.
- 5) Abnormal levels and usage rates are identified and reported to supervisor or other maintenance personnel.
- 6) Precautions are taken to prevent the starting of equipment under conditions which are dangerous to equipment or personnel.
- 7) Records are completed in accordance with site standard procedures.
- 8) Communication with others involved with the work is established and maintained to ensure efficient work flow co-ordination, personnel co-operation and safety throughout the application of this competency.

2 Change routinely serviced parts

- 1) Availability of parts for change is confirmed or parts ordered.
- 2) Routine change charts and schedules are followed.
- 3) Parts usage is logged in accordance with site procedures.
- 4) Parts are changed in accordance with manufacturers' recommendations and site procedures.
- 5) Disposal of changed parts to conform with regulatory or procedural requirements.
- 6) Records are completed in accordance with site standard procedures.

3 Carry out regular cleaning

- 1) Equipment operating cabins are cleaned as necessary to enable safe operation.
- 2) Equipment engine bays, wheel or track bays and other external confined areas are routinely cleared in accordance with requirements of usage and conditions.
- 3) Fluid leaks are identified during cleaning and traced to identify potential problems and reported in accordance with site procedures.

4 Complete pre-start, start-up and shut-down checks

- 1) Site tagging procedures are followed.
- 2) Structural components are checked for loose parts, wear and cracking in accordance with manufacturers' recommendations and site procedures.
- 3) Loose bolts and screws are tightened within site procedures.
- 4) Tension of drive belts and chains is checked and adjusted as necessary in accordance with manufacturers' recommendations and site standards.
- 5) Hoses are checked for crushing, kinking and chafed areas and repaired, re-routed and/or reported as necessary in accordance with site procedures.
- 6) Hydraulic cylinders and rods are checked and damage reported in accordance with site procedures.
- 7) Damage or moisture entry to electrical components is reported as necessary in accordance with site procedures.
- 8) Machinery out of service is tagged/isolated in accordance with site procedures.

5 Monitor equipment operation for maintenance problems

- 1) Equipment is monitored using gauges, warning devices and observations of performance to determine operating faults.
- 2) Abnormal noise, vibration or performance in operating equipment is identified and action is taken to stop equipment immediately or check operational concerns according to seriousness and site standards.
- 3) Cause of break-downs is investigated to enable immediate repairs or maximise notifiable information.
- 4) Minor emergency maintenance is completed where equipment is away from repair facilities in accordance with site procedures.
- 5) Break-downs are notified to maintenance personnel in accordance with site procedures.

Range of Variables

- Checking may include that required for stationary and mobile equipment typically used for forest harvesting operations.
- All checking, filling, component changing and minor repair work may be undertaken in a forest environment.
- Items checked include equipment structural features and attachments, drive lines, engine, transmission, final drives, tracks, wheels and tyres, winch and grapple systems.
- Fluid levels checked include fuel, engine oil, coolant, brake fluid, hydraulic fluid and transmission fluid.
- Pressures checked are those for tyres, accumulators and operational systems including engine oil, hydraulic and pneumatic.
- Routinely changed parts may include oil, air, fuel and hydraulic filters, light bulbs, hoses and drive belts.
- OH&S regulations include wearing of required personal protection equipment, manual handling requirements and requirements for operation and checking of equipment.

Evidence Guide

Underpinning Knowledge

- Explains:
 - ◇ OH&S regulations, policies and procedures for maintaining equipment
 - ◇ schedules and responsibilities on the range of equipment required
 - ◇ reporting and documentation
 - ◇ the method by which contaminated materials and components are removed from site and the correct means of their disposal
 - ◇ the importance of accuracy
 - ◇ the purpose of record keeping.

Underpinning Skills

- Demonstrates the ability to:
 - ◇ safely maintain equipment
 - ◇ locate, interpret and apply relevant information
 - ◇ convey information in oral form
 - ◇ interpret and apply common industry terminology
 - ◇ perform basic maintenance on the range of forestry equipment/machines
 - ◇ use relevant tools.

Critical Aspects of Evidence

- Assessment must confirm the application of appropriate knowledge and skills to:
 - ◇ safely perform maintenance functions
 - ◇ communicate effectively with others in associated areas
 - ◇ perform routine checks, filling and lubrication
 - ◇ change routinely serviced parts
 - ◇ carry out regular cleaning
 - ◇ complete pre-start, start-up and shut-down checks
 - ◇ monitor equipment operation for maintenance problems.

Interdependent Assessment of Units

This unit of competency may be assessed in conjunction with other units which form part of a job role.

Assessment Context

This unit may be assessed in the workplace or under conditions which accurately simulate a realistic workplace.

Key Competencies & Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing & organising information	•		
Communicating ideas & information	•		
Planning & organising activities	•		
Working with others in teams	•		
Using mathematical ideas & techniques	•		
Solving Problems	•		
Using technology	•		

Description

This is an endorsed unit from the Local Government Industry National Competency Standards. These standards are currently under review.

This unit covers the scoping of contract services, preparation of tender documentation, calling of tenders.

- 1 Identify the extent and nature of services to be contracted**
 - 1) The scope of the services is confirmed and reviewed to ensure parameters meet current requirements.
 - 2) Statutory and organisation requirements are identified to determine options available.
 - 3) Detailed parameters are specified to enable a complete brief to be prepared.
 - 4) The extent of the contract package is determined.
- 2 Select appropriate method for tender**
 - 1) Area to be contracted is examined.
 - 2) Contract options are identified and analysed.
 - 3) Benefits/costs/opportunities of each option are identified.
 - 4) Appropriate contract option is selected.
- 3 Prepare tender specifications according to organisation and Australian standards**
 - 1) Complete and detailed service specifications are prepared consistent with organisation policy and Australian standards and based on a service profile and review.
 - 2) Legislative, occupational health and safety and risk management requirements are applied.
 - 3) Quality assurance methods are applied to the preparation of service specifications.
 - 4) Service specifications are prepared in consultation with relevant staff that complement required outcomes.
 - 5) Details on methods, standards, materials, products, contractors and performance period is provided by quality service specifications, as applicable.
- 4 Prepare evaluation criteria**
 - 1) Tender review panel/team established from appropriate personnel.
 - 2) Criteria established based on specifications, product and service required.
 - 3) Criteria are written clearly to enable bids to be compared.
 - 4) Criteria are ranked against organisation procedures, such as essential/desirable, mandatory.
- 5 Prepare tender document**
 - 1) Tender documents are prepared clearly and concisely.
 - 2) Tender documents are prepared which enable competitive pricing of products.
 - 3) Tender documents are designed to enable valid comparisons between tenders received.

6 Invite tenders

- 1) Invitations are prepared based on the type of tendering method used.
- 2) Source list is prepared according to organisation procedures.
- 3) Advertisement is prepared and placed according to the tender method.

Range of Variables

- Application of this competency will vary according to the organisation's size; location; organisational structure; resources; state/territory statutory requirements; business/strategic plans; and policies and practices
- Services may include: works; function; provision
- Parameters may include: budget range; organisation resources; level of risk; organisation policy such as *buy local*
- Tendering methodology may include: lump sum; unit rate; partnership; services process
- Tendering method may include: expression of interest; public tender; invitation; verbal; written; in-house bid; select tender
- Preparation of tender documentation may include: documentation developed using standardised format; plain English principles
- Advertisement may include: newspaper; in house; trade magazines; according to organisation policy
- Legislative requirements may include: workcover; risk management; occupational health and safety; equal employment opportunity; sexual harassment; public liability; professional indemnity; evidence of insurance cover; quality assurance
- Tender documents may include: general conditions; special clauses; technical conditions; standard specifications; code of tendering; statutory declaration; evaluation criteria; drawings; implementation plan; legislative amendments; legal endorsement
- Comparative statement may include: matrix; data; criteria; compliance; score
- Formalisation may include: contract signing procedure; preliminary deposits
- Evaluation may include: previous projects; verification of quality accreditation; capacity; capability; risk; security; service.

Evidence Guide

Critical aspects of evidence

- contract authorisation process undertaken
- appropriate advertisement placement
- production of required specifications
- production of conditions of contract
- industrial standard conditions of contract are applied
- confidentiality and probity observed for both in-house bids and/or external tenders.

Interdependent assessment of units

Prerequisite units: nil

Co-requisite units: nil

Underpinning knowledge

- relevant organisation policy and procedures, code of conduct
- quality assurance systems
- relevant Australian and industry standards
- statutory and organisation tender requirements
- contractual processes
- industrial agreements
- statutory organisation requirements
- tendering codes of practice.

Underpinning skills

- report writing, specification writing
- qualitative and quantitative research
- analytical
- consultation with relevant personnel
- specification interpretation
- negotiation with relevant internal and external people
- observation of protocol and probity policies.

Resource implications

No special requirements.

Consistency in performance

Evidence will need to be gathered over time across a range of variables.

Context of assessment

On-the-job or in a simulated work environment.

Key Competencies and Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing and organising information		•	
Communicating ideas and information		•	
Planning and organising activities	•		
Working with others in teams		•	
Using mathematical ideas and techniques	•		
Solving problems		•	
Using technology	•		

Description

This is an endorsed unit from the Local Government Industry National Competency Standards. These standards are currently under review.

This unit describes the work involved in the administration, monitoring and transition of contracts.

1 Establish administration procedures

- 1) Administrative processes for contracts are implemented according to organisation quality procedures.
- 2) Contract requirements are confirmed with relevant contract personnel.
- 3) Complaint system is established according to organisation policy and procedures.
- 4) Consistent and accurate records of contract progress are maintained in accordance with organisational requirements and formats.

2 Monitor contract timeframe and specifications

- 1) Regular inspections of contract services are undertaken to ensure compliance with specifications and program for completion.
- 2) Regular planned progress meetings are held and documented between all contract personnel to ensure problems are identified and resolved early.
- 3) Variations between the specified scope of services and the contract are identified and documented, and relevant personnel notified without delay.
- 4) Testing of services in progress is carried out as required by the contract in accordance with organisation policy and any relevant legislation, regulation and organisation policy.

3 Monitor costs

- 1) Contract costs are monitored on a regular basis to ensure that the service is carried out within financial and contractual requirements.
- 2) Payments for contract services are authorised in accordance with the conditions of contract and delegation of officer.
- 3) Transaction costs are monitored through the established organisational system.

4 Resolve contractual disputes

- 1) Any disagreements are investigated to identify cause and validity.
- 2) Terms of resolution are negotiated and agreed.
- 3) Contract provisions for dispute resolution are followed.
- 4) Legal and management advice is sought at an early stage of any dispute, to ensure that the contractor has a clear understanding of the organisation's legal position and that the organisation is not exposed to undue legal risk.
- 5) Appropriate legal advice is sought at any stage in order to clarify any technical aspects of a dispute.

5 Implement contract transition

- 1) Contract conditions and responsibilities are reviewed with relevant personnel to ensure satisfactory completion of contract.
- 2) Contract completion is authorised in writing to confirm completed services have been undertaken according to contract objectives and specifications.
- 3) Final statement is reconciled.
- 4) Contractor performance/level of service is evaluated against agreed benchmark.
- 5) End-of-service or renewed contracts are co-ordinated to meet organisation requirements.
- 6) Quality of contract documentation is assessed.

Range of Variables

- Application of this competency will vary according to the organisation's size; location; organisational structure; resources; state/territory statutory requirements; business/strategic plans; and policies and practices
- Contract administration may include: supervision; management; monitoring; overseeing
- Records of contract progress may include: photographs; data; progress reports; customer surveys; minutes of meetings
- Services may include: forest management operations (e.g. pruning, fertilising, planting); harvesting operations; product; maintenance; supply; cleaning; waste
- Testing may include: sample; routine checks; audit; observation; meetings; laboratory; occupational health and safety; equal employment opportunity
- Payments may include: progressive; lump sum
- Conditions of contract may include: tender documentation; maintenance plan; defects liability
- Performance of contractor is evaluated may include: in terms of adherence to timelines; estimated costs; progress toward objectives; adherence to quality standards; occupational health and safety; equal employment opportunity practices.

Evidence Guide*Critical aspects of evidence*

- maintenance of file relating to records of meetings, payment, progress reports, file notes and discussions
- effective communication with the contractor
- monitoring of industry changes and making recommendations
- ability to cover a range of contracts
- maintain up-to-date insurance file, workcover, occupational health and safety and audit processes.

Interdependent assessment of units

Prerequisite units: nil

Co-requisite units: nil

Underpinning knowledge

- occupational health and safety procedures and policies
- relevant legislation, regulation and organisation policies
- contract procedures
- contract law
- knowledge of the contract service
- performance standards and analysis
- complaints procedures
- costing processes.

Underpinning skills

- negotiation/liaison across a range of internal/external customers
- contingency management
- contract interpretation
- project management
- conflict resolution
- client interaction
- financial
- time management.

Resource implications

No special requirements.

Consistency in performance

Evidence will need to be gathered over time across a range of variables.

Context of assessment

On-the-job or in a simulated work environment.

Key Competencies and Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing and organising information		•	
Communicating ideas and information		•	
Planning and organising activities		•	
Working with others in teams	•		
Using mathematical ideas and techniques	•		
Solving problems	•		
Using technology	•		

Description

This is an endorsed unit from the Local Government Industry National Competency Standards. These standards are currently under review.

This unit covers establishing an inventory, assessing opportunities and threats and developing strategies for heritage and cultural assets.

1 Prepare inventory of heritage and cultural assets

- 1) Heritage and cultural assets are identified within community and organisation expectations and requirements.
- 2) The significance of each heritage and cultural asset is assessed according to established criteria and community expectations.
- 3) An adequate information base on significant places is obtained through comprehensive field investigation and research.
- 4) Data is collected on heritage and cultural assets accurately and objectively.
- 5) A comprehensive inventory of heritage and cultural assets is prepared with full and detailed description of history and significance.

2 Assess threats and opportunities for the protection of heritage and cultural assets

- 1) Threats and opportunities are identified to ensure all factors are fully assessed.
- 2) Criteria are established to enable threats and opportunities to be prioritised, based on input from organisation and the community.

3 Identify and develop strategies for the protection of heritage and cultural assets

- 1) Criteria are established to identify priorities.
- 2) Consultation with the community and stakeholders is undertaken to seek views on the conservation action required to protect the significant attributes of the area.
- 3) A framework for the legal protection of heritage and cultural assets is established through existing legislation.
- 4) Practical and appropriate strategies to conserve heritage and cultural assets are determined.
- 5) The effectiveness of strategies is assessed through a comparison with methods used elsewhere.
- 6) The policy elements of the proposed heritage program are determined.
- 7) Innovative approaches are developed to protect heritage and cultural assets in response to the local community need.

4 Implement strategies for the protection of heritage and cultural assets

- 1) The study and program are adopted by the local authority.
- 2) Consultation is undertaken with the community and stakeholders about the study and proposed heritage program.
- 3) Financial resources are identified and procured within budget cycles to support the achievement of required outcomes.
- 4) Personnel are identified, trained and assigned to tasks so that requirements for skills and knowledge are met.
- 5) Physical facilities and equipment are identified and procured within budget cycles to support the achievement of required outcomes.
- 6) Community education and information materials are prepared and distributed to ensure on-going support for the strategy.
- 7) The strategy is implemented within organisation policy and procedures and relevant legislative requirements.
- 8) A timetable is established for implementation and priorities are established.

5 Monitor and review the effectiveness of strategies to protect heritage and cultural assets

- 1) Further research is undertaken on places listed as being of local significance in the study.
- 2) Additional plans of significance are identified and reviewed.
- 3) An annual heritage report is prepared if required.
- 4) Information received from monitoring and review is used to develop new strategies which are based on accumulated knowledge and experience.

Range of Variables

- Application of this competency will vary according to the organisation's size; location; organisational structure; resources; state/territory statutory requirements; business/strategic plans; and policies and practices
- Significance may include: aesthetic; historical; scientific and social aspects; community expectation
- Degree of significance may include: national; state; regional; high local; local; contributory
- Data may include: survey information; historical research; existing reports/studies/texts
- Information may include: written records; oral; anecdotes; reports; instructions; directions from supervisor/management; interviews; formal and informal; team meetings; reports from other services; agencies; specialists; experts; media
- Criteria may include: community preferences; budget constraints; legislative provisions; resources; timeframes; age; outstanding craftsmanship; architectural style; construction technology; an association with important events or figures; building type; rarity; technical or creative or technical achievement; represent a way of life; artistic; religious or cultural associations
- Place of significance may include: buildings; structures; plantings; sub-surface remains; land use patterns
- Heritage may include: cultural; environmental issues; national versus local area significance; danger component of heritage element/structure
- Threats may include: political emphasis; maintenance reductions; lack of planning; other authorities planning; competing interests; community attitude.

Evidence Guide*Critical aspects of evidence*

- heritage and cultural assets are identified and protected
- strategies to protect heritage and cultural assets identified and implemented
- monitoring processes in place.

Interdependent assessment of units

Prerequisite units: nil

Co-requisite units: nil

Underpinning knowledge

- Heritage assets
- Cultural assets
- Asset classification
- Organisation structures and services
- Town planning
- Community needs and expectations
- Regulations/standards/policies
- Community information.

Underpinning skills

- Research
- Collation of information across local, national and international sources
- Evaluation methodologies
- Consultation across a range of community and government agencies
- Strategic planning
- Budgeting and lifecycle costings
- Community education strategies
- Project management.

Resource implications

No special requirements.

Consistency in performance

Evidence will need to be gathered over time across a range of variables.

Context of assessment

On-the-job or in a simulated work environment.

Key Competencies and Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing and organising information			•
Communicating ideas and information			•
Planning and organising activities		•	
Working with others in teams		•	
Using mathematical ideas and techniques		•	
Solving problems			•
Using technology		•	

Description

This is an endorsed unit from the Local Government Industry National Competency Standards. These standards are currently under review.

This unit covers allocation of funds, management of cash flow and preparation of financial reports.

1 Allocate funds

- 1) Funds are allocated according to agreed priorities.
- 2) All relevant people are kept informed of resource decisions, allocations and usage.
- 3) Records of resource allocation and usage are current and complete according to relevant legislation and organisation/department requirements.

2 Manage cash flow

- 1) All documentation on cash flow is up to date and accurate.
- 2) Cash receipts and payments are monitored against budgeted cash flow.
- 3) Relevant employees/departments are consulted to determine the likely pattern of cash flows and to anticipate any unusual receipts/payments.
- 4) Forecasts of future cash flows are made in accordance with available information.
- 5) Cash budgets are presented in the approved format and clearly indicate net cash requirements.
- 6) Significant deviations from the projected cash flow requirements are identified, assessed and appropriate action taken.
- 7) Cash budgets are developed to ensure effective utilisation of on hand funds whilst maintaining an adequate level of liquidity.

3 Monitor and control activities against budget

- 1) Systems are implemented to facilitate timely and accurate monitoring of actual expenditure and income against budgetary predictions.
- 2) Actual income and expenditure is checked against budgets at regular designated intervals.
- 3) Deviations from expected budget estimates/expenditure are identified and addressed and/or reported according to organisation procedure.
- 4) Departments/relevant employees are advised of financial status with regard to budget allocations and expenditure.

4 Prepare reports

- 1) Financial reports are prepared which are accurate, clear and concise.
- 2) Financial reports are prepared within required timeframes according to organisation/department, auditing and legislative requirements.

Range of Variables

- Application of this competency will vary according to the organisation's size; location; organisational structure; resources; state/territory statutory requirements; business/strategic plans; policies and practices
- Budgets may be for large or small departments or particular programs or projects of various sizes
- Relevant people may include: employees affected by the budget; management; contractors.

Evidence Guide

Critical aspects of evidence

- unexpected changes (e.g. loss of income or funding) are identified and impact minimised
- finances are managed within budget and any variations are managed in accordance with organisation procedures.

Interdependent assessment of units

Prerequisite units: nil

Co-requisite units: nil

Underpinning knowledge

- relevant legislation
- auditing requirements
- relevant organisation/department requirements and guidelines
- budget processes and procedures
- relevant accounting procedures.

Underpinning skills

- forecasting
- contingency management
- review
- reporting
- consultation.

Resource implications

No special requirements.

Consistency in performance

Evidence will need to be gathered over time across a range of variables during a full budgetary cycle (i.e. 12 months).

Context of assessment

On-the-job or in a simulated work environment.

Key Competencies and Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing and organising information	•		
Communicating ideas and information	•		
Planning and organising activities	•		
Working with others in teams	•		
Using mathematical ideas and techniques		•	
Solving problems	•		
Using technology	•		

Description

This is an endorsed unit from the Local Government Industry National Competency Standards. These standards are currently under review.

This unit covers devising and conducting community consultations and reporting on results.

1 Devise consultation strategies

- 1) A range of consultative strategies is identified and assessed for suitability.
- 2) Interested and affected parties are identified.
- 3) Resources required to conduct consultation are assessed.
- 4) Consultation strategies are chosen which enable and encourage relevant groups/people to be involved.
- 5) Legislative and organisation requirements are reviewed to ensure strategies meet all criteria.

2 Conduct consultations

- 1) Information is prepared which is clear, accurate and appropriate to the needs of the parties.
- 2) All people involved in conducting the consultations are briefed on the process of consultation and the parties involved.
- 3) Information is provided to affected parties at an appropriate time and place.
- 4) Access and equity requirements are implemented in the consultations.
- 5) Measures to expedite community consultation are taken to ensure consultation occurs within an identified timeframe.
- 6) Consultation is undertaken in an orderly manner to ensure all viewpoints are canvassed.

3 Record, analyse and report on results

- 1) Responses are grouped and collated into similar categories to facilitate analysis.
- 2) The validity of responses is checked against design criteria.
- 3) Public consultation responses and processes are formatted to enable informed decision making to proceed.
- 4) Appropriate suggestions for improvement are incorporated within design parameters.
- 5) Summaries of responses and adopted amendments are provided to interested parties to ensure public consultation is recognised.
- 6) Other issues raised during consultation are directed to relevant department/person to respond to community concern.
- 7) An accurate report on community consultation is prepared with recommendations to enable informed decision making to occur.
- 8) The overall effectiveness consultation process is reviewed and evaluated and action taken where necessary.

Range of Variables

- Application of this competency will vary according to the organisation's size; location; organisational structure; resources; state/territory statutory requirements; business/strategic plans; policies and practices
- Application of the competencies will also vary according to the nature of the community; sole worker/large team; rural/metropolitan area
- Access and equity may include: subject matter; manner in which consultations are conducted; physical accessibility; community profile
- Enabling and encouraging relevant groups to be involved may include: physical accessibility; diverse language needs; culture (Aboriginal/youth/non-English speaking background); physical environment; number of people
- Information may include: written records; oral; anecdotes; reports; instructions; directions from supervisor/management; interviews; formal and informal; team meetings
- Interested parties may include: community groups; other authorities; individuals; emergency authorities (police; fire; ambulance); private sector business interests; special interest groups; experts
- Resources may include: human; financial; locations
- Consultation strategies may include: public meetings; questionnaires; informal gatherings
- Legislation may include: State/federal/local government; anti-discrimination; planning
- Presentation of Information may include: graphics; models; computer animations; video displays; overheads; handouts; display plan; interpreter service.

Evidence Guide*Critical aspects of evidence*

- Community consultation is conducted to ensure organisations image/reputation is maintained or enhanced. Community consultation produces valid and useful information.

Interdependent assessment of units

Prerequisite units: nil

Co-requisite units: nil

Underpinning knowledge

- relevant organisation policy and procedures
- relevant legislation including planning, anti-discrimination
- relevant sections of local government act
- access and equity issues
- strategies for consultation
- code of conduct, ethics.

Underpinning skills

- consultation, presentation, negotiation and report writing
- research, planning
- information gathering.

Resource implications

No special requirements.

Consistency in performance

Evidence will need to be gathered over time across a range of variables.

Context of assessment

On-the-job or in a simulated work environment.

Key Competencies and Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing and organising information			•
Communicating ideas and information			•
Planning and organising activities		•	
Working with others in teams	•		
Using mathematical ideas and techniques			
Solving problems		•	
Using technology	•		

Description

This is an endorsed unit from the Local Government Industry National Competency Standards. These standards are currently under review.

This unit covers establishment, implementation and monitoring of organisational/divisional operational plans.

1 Facilitate the development of operational plans

- 1) Key strategies are established and incorporated.
- 2) Legal and community expectations pertaining to the plans are investigated and clarified.
- 3) Research on the trends impacting on the functional area is undertaken.
- 4) The resources available for each program are identified and taken into consideration when formulating operational plans.

2 Link operational plans to organisations strategic/management plan

- 1) Objectives for programs and sub-programs are developed.
- 2) Appropriate implementation procedures and performance indicators are established to assist planning and monitoring.
- 3) Operational plans are presented for adoption.

3 Co-ordinate and monitor the implementation of operational plans

- 1) Reporting mechanisms are developed to incorporate budget performance and quality assurance outcomes.
- 2) Plans and programs are prioritised and implemented according to organisation's strategy, availability of funding and levels of resources required.
- 3) Strategies to communicate operational plans and programs to staff and community are established via the appropriate media.

4 Review and evaluate operational plans

- 1) Operational plans are reviewed and remedial action taken as required.

Range of Variables

- Application of this competency will vary according to the organisation's size; location; organisational structure; resources; state/territory statutory requirements; business/strategic plans; and policies and practices
- Competitive tendering may include: (both compulsory and non-compulsory) and organisation policies on outsourcing versus use of its own internal resources will also impact on the operational planning process
- Key strategies may include: linking operational plans to strategic/management plans; organisations goals; objectives and priorities; operational efficiency and effectiveness.

Evidence Guide*Critical aspects of evidence*

- links between strategic and operational plans and budget
- effective use of resources is maximised within organisational and legislative constraints.

Interdependent assessment of units

Prerequisite units: nil

Co-requisite units: nil

Underpinning knowledge

- organisation's political, social, economic and environmental context
- organisation's strategic/business plan(s), goals, and objectives
- relevant sections of local government act
- organisation's resource base (ie available and potential financial, physical and human resources).

Underpinning skills

- operationalising strategic/business plans
- verbal communication, presentation, negotiation, consultation and liaison
- utilising/working with the media
- written communication including reports and media releases
- team building
- operational planning techniques including establishing performance measures/criteria
- cost/benefit analysis.

Resource implications

No special requirements.

Consistency in performance

Consistent evidence across a range of activities involved in annual operational planning cycle.

Context of assessment

On-the-job or in a simulated work environment.

Key Competencies and Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing and organising information			•
Communicating ideas and information			•
Planning and organising activities			•
Working with others in teams			•
Using mathematical ideas and techniques		•	
Solving problems			•
Using technology	•		

Description

This is an endorsed unit from the Local Government Industry National Competency Standards. These standards are currently under review.

This unit covers establishing the need for, consulting on, developing, implementing and reviewing policies and procedures for organisation.

1 Establish the need for a policy or procedure

- 1) The need for the policy/procedures is assessed for its contribution to effective and efficient practice in the work area.
- 2) Existing policies are reviewed to maintain relevance and effectiveness.
- 3) The objectives for establishing the policy/procedures are identified.

2 Consult on the development of the policy/procedure

- 1) Terms of reference and guidelines are prepared and provided to key stakeholders.
- 2) Employees directly effected by the process are kept fully informed.

3 Facilitate the preparation of a draft policy/procedure

- 1) Draft is prepared in accordance with organisation procedures.
- 2) Draft policy/procedure is consistent with organisational objectives and takes account of resource availability and specify timeframes for implementation.
- 3) All relevant legislation is complied with.
- 4) The draft policy/procedure incorporates outcomes of the consultative process where appropriate.
- 5) The draft policy/procedure is presented to management for endorsement.

4 Ensure implementation of policy/procedure

- 1) New policy/procedure is integrated into existing policy/procedures manuals/information.
- 2) Employees are informed of new policy/procedure and of their responsibilities.
- 3) Education and training is given to employees where necessary to ensure correct implementation of policy/procedures.

5 Review policy/procedures

- 1) Policies/procedures are evaluated against establishment objectives and workplace impact.
- 2) Timeframes for evaluation process are determined.
- 3) Feedback from employees on implementation issues and outcomes is sought and evaluated.
- 4) Problems identified are resolved.
- 5) Where appropriate, modifications to policies/procedures are recommended/undertaken.

Range of Variables

- Application of this competency will vary according to the organisation's size; location; organisational structure; resources; state/territory statutory requirements; business/strategic plans; and policies and practices
- Policy and procedures may include: equal employment opportunity; occupational health and safety; performance assessment; grievance; training; recruitment
- Employees may be informed may include: on a one-to-one basis; by group training; by distribution of hard copies of guidelines or via E-mail messages.

Evidence Guide*Critical aspects of evidence*

- new policies/procedures and/or changes to existing policies/procedures support corporate direction and strategy.

Interdependent assessment of units

Prerequisite units: nil

Co-requisite units: nil

Underpinning knowledge

- relevant legislation
- relevant organisation policies and procedures.

Underpinning skills

- communicate, consultation, negotiation, presentation and report writing
- evaluation, review, problem solving and contingency management.

Resource implications

No special requirements.

Consistency in performance

Evidence will need to be gathered over time across a range of variables.

Context of assessment

On-the-job or in a simulated work environment.

Key Competencies and Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing and organising information			•
Communicating ideas and information		•	
Planning and organising activities		•	
Working with others in teams			•
Using mathematical ideas and techniques			
Solving problems			•
Using technology	•		

Description

This is an endorsed unit from the Local Government Industry National Competency Standards. These standards are currently under review.

This unit describes the work involved to issue permits in a forest area.

1 Receive and record applications for permits

- 1) Applications for permits are received in accordance with organisation procedures and client expectation.
- 2) Applications are accurately recorded in accordance with organisation procedures.

2 Process applications for permits

- 1) Applications are checked for accuracy and comprehensiveness.
- 2) Applications are dispatched to the appropriate organisational section or to the applicant.
- 3) Applications are filed as required by organisation procedures.

3 Evaluate and make determinations on applications for permits

- 1) Applications are assessed against set criteria.
- 2) Determinations are made based on set criteria and organisation requirements.

4 Issue permits

- 1) Applicants and relevant organisation staff are informed of the determination in accordance with organisation procedures.
- 2) Permits are issued in accordance with organisation procedures.

Range of Variables

- Application of this competency will vary according to the organisation's size; location; organisational structure; resources; state/territory statutory requirements; business/strategic plans; and policies and practices
- Permits may include: timber harvesting; firewood collection; quarry operation
- Applications may be processed over the telephone; by letter; over the counter.

Evidence Guide*Critical aspects of evidence*

- record of applications
- processing in accordance with policies and procedures
- records of permits issued
- appropriate communication with public.

Interdependent assessment of units

Prerequisite units: nil

Co-requisite units: nil

Underpinning knowledge

Administrative procedures, filing systems, types of permits, organisation structure and services, assessment criteria, organisation procedures for issuing permits.

Underpinning skills

Word processing, filing, telephone, written and verbal communication with the public – modifying language to accommodate language and cultural differences.

Resource implications

No special requirements.

Consistency in performance

Evidence will need to be gathered over time across a range of variables.

Context of assessment

On-the-job or in a simulated work environment.

Key Competencies and Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing and organising information	•		
Communicating ideas and information	•		
Planning and organising activities		•	
Working with others in teams	•		
Using mathematical ideas and techniques			
Solving problems	•		
Using technology	•		

Description

This is an endorsed unit from the Local Government Industry National Competency Standards. These standards are currently under review.

This unit covers monitoring to ensure compliance in areas under the organisation's jurisdiction.

1 Inspect designated work areas

- 1) Designated work areas to be inspected are identified and defined.
- 2) Routine inspections of identified and defined areas are carried out in accordance with organisation requirements.
- 3) Non routine inspections are carried out in accordance with organisation requirements.

2 Identify, assess and act on risks to the public and the environment

- 1) Risks to the public and the environment are identified and the level of risk is determined.
- 2) Appropriate action is taken and reported in accordance with legislative and organisation requirements.
- 3) Evidence of offence is gathered and documented in accordance with organisation procedures.

3 Respond to complaints regarding risks to public health and safety or possible breaches of legislation

- 1) Complete details of complaint are obtained and assessed for further action.
- 2) Complainant is advised of proposed action in accordance with organisation procedures.
- 3) Evidence is gathered and documented in accordance with organisation procedures and guidelines.
- 4) Diaries or reports of incident are fully completed in accordance with organisation standards.

4 Maintain records

- 1) Information is recorded in accordance with organisation and legislative requirements.
- 2) Details are recorded clearly, legibly and accurately.
- 3) Records are secured, accessible and up to date.

Range of Variables

- Application of this competency will vary according to the organisation's size; location; organisational structure; resources; state/territory statutory requirements; business/strategic plans; and policies and practices
- Risks may include: overhanging foliage; chemicals; bushfire; animals; noxious weeds.

Evidence Guide

Critical aspects of evidence

- routine and non routine inspection
- risk assessment
- response to complaints
- records collected and maintained
- incident reports completed in accordance with organisation standards.

Interdependent assessment of units

Prerequisite units: nil

Co-requisite units: nil

Underpinning knowledge

- organisation structure and services
- organisation area
- organisation policies and procedures regarding risks to public health and safety and relevant legislation
- community needs/expectations
- relevant legislation.

Underpinning skills

- inspection techniques
- risk identification
- verbal communication with public appropriate to cultural and language background of the individual/group
- record keeping
- written reports may include: record events in sequence
- administration.

Resource implications

No special requirements.

Consistency in performance

Evidence will need to be gathered over time across a range of variables.

Context of assessment

On-the-job or in a simulated work environment.

Key Competencies and Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing and organising information		•	
Communicating ideas and information	•		
Planning and organising activities	•		
Working with others in teams	•		
Using mathematical ideas and techniques			
Solving problems	•		
Using technology			

Description

This is an endorsed unit from the Local Government Industry National Competency Standards. These standards are currently under review.

This unit covers the administration of relevant legislation to ensure compliance.

1 Detect possible breaches

- 1) Possible breaches are detected and recorded in accordance with legislative and organisation requirements.

2 Investigate possible breaches

- 1) Possible breaches are reviewed and information obtained as required.
- 2) Inspection is conducted and relevant details accurately recorded.
- 3) Available information is assessed against relevant legislation to determine if a breach has occurred.
- 4) Any complainant is advised of investigation outcomes in accordance with organisation policies and procedures.
- 5) All parties are informed of their rights according to legislation within appropriate timeframes.

3 Determine appropriate action to achieve compliance

- 1) Consultation with the alleged offending party is undertaken to facilitate resolution.
- 2) Options for action are identified to achieve compliance at the earliest date with the least inconvenience to all parties.
- 3) A practical action to achieve compliance is selected as a result of consultation.

4 Undertake action to achieve compliance

- 1) Notices are issued to relevant parties that clearly document breaches and recommend appropriate action to achieve compliance.
- 2) A clear report recommending appropriate action is prepared and submitted to the appropriate authority.
- 3) Proceedings are instigated within the required timeframe in terms of required legal procedure.

Range of Variables

- Application of this competency will vary according to the organisation's size; location; organisational structure; resources; state/territory statutory requirements; business/strategic plans; and policies and practices
- Appropriate authority may include: management; external authority
- Breaches may include: removing flora/fauna/soils; illegal timber harvesting; litter; pollution; illegal land use; fires; off road vehicle
- Organisation policy and procedures may include: priority; bona fides of a complainant
- Timeframe may include: statute of limitations; state or territory-specific
- Legislation may include: federal; state; territory and local controls
- Information may include: written records; oral; anecdotes; reports; instructions; directions from supervisor/management; interviews; formal and informal; team meetings; reports from other services; agencies; specialists; experts; media.

Evidence Guide

Critical aspects of evidence

- Complaints investigated
- Consultation with alleged offender
- Notices issued
- Reports compiled.

Interdependent assessment of units

Prerequisite units: nil

Co-requisite units: nil

Underpinning knowledge

- Organisation structure and services
- Relevant legislation and controls
- Forms of action
- Types of notices
- Administration.

Underpinning skills

- Negotiation – provide supporting reasons, consider suggestions of others, respond appropriately
- Investigation
- Work to timelines
- Inspection techniques for possible breaches
- Communicate with public – adjust communication to accommodate language and cultural differences
- Select, read and interpret relevant legislation
- Written report may include: structure introduces the issue, arguments and supporting evidence, recommended actions.

Resource implications

No special requirements.

Consistency in performance

Evidence will need to be gathered over time across a range of variables.

Context of assessment

On-the-job or in a simulated work environment.

Key Competencies and Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing and organising information		•	
Communicating ideas and information		•	
Planning and organising activities		•	
Working with others in teams	•		
Using mathematical ideas and techniques			
Solving problems		•	
Using technology	•		

Description

This is an endorsed unit from the Local Government Industry National Competency Standards. These standards are currently under review.

This unit covers the monitoring of organisation compliance procedures to ensure they are in line with legislative requirements and based on up to date information.

1 Maintain up-to-date knowledge of relevant legislation

- 1) Sources of information on relevant legislation are identified and accessed.
- 2) Strategies are established to ensure dissemination of information on legislation to relevant staff.
- 3) Knowledge of legislation that is significant to local government is up-to-date.

2 Monitor procedures to ensure compliance

- 1) Procedures are examined to ensure compliance with relevant legislation.
- 2) Required changes to procedures are identified.
- 3) Relevant personnel are advised about required changes.

Range of Variables

- Application of this competency will vary according to the organisation's size; location; organisational structure; resources; state/territory statutory requirements; business/strategic plans; and policies and practices
- Legislation may include: federal; state; local government by-laws
- Sources of information may include: Australian Government Publishing Service; state/territory parliament; manager/directors; other agencies and departments.

Evidence Guide*Critical aspects of evidence*

- Strategies for ensuring staff have current information
- Procedures identified/reviewed for compliance.

Interdependent assessment of units

Prerequisite units: nil

Co-requisite units: nil

Underpinning knowledge

- Organisation procedures for compliance
- Relevant legislation.

Underpinning skills

- Interpretation of the impact of legislative changes on organisation procedures
- Maintain internal communication channels
- Analysis; read and critically interpret structurally intricate information
- Reporting results of analysis of information is comprehensive and clear.

Resource implications

Time required to interview, observe, read materials, and provide feedback over time, and prepare assessment report.

Consistency in performance

Evidence will need to be gathered over time across a range of variables.

Context of assessment

On-the-job or in a simulated work environment.

Key Competencies and Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing and organising information		•	
Communicating ideas and information		•	
Planning and organising activities		•	
Working with others in teams	•		
Using mathematical ideas and techniques			
Solving problems			
Using technology	•		

Description

This is an endorsed unit from the Local Government Industry National Competency Standards. These standards are currently under review.

This unit covers the development, educational programs to improve compliance and minimise legal actions.

1 Identify target groups in the community

- 1) Target groups who are required to comply with legislation and by-laws are identified.
- 2) Characteristics of the target groups are identified.
- 3) Relevant legislation for each group is identified.

2 Identify education strategies for improved compliance

- 1) Relevant information to assist target groups with compliance is identified.
- 2) Links with target groups are established to identify needs.
- 3) Data on the effectiveness of various methods is gathered and analysed for effectiveness in the context of target group needs.
- 4) Criteria and specialist knowledge and skills are applied to determine the most suitable methods.

3 Develop programs to encourage compliance

- 1) Resources are identified within budget cycle.
- 2) Consultation on the draft program is carried out with stakeholders.
- 3) Feedback (including conflicts) is evaluated and incorporated into program plan as appropriate to targets, relevant policy, community expectations and legislation and resources.
- 4) Actions are prioritised to achieve most effective and efficient results.
- 5) Plan is presented to management for endorsement.
- 6) Plan is distributed to relevant personnel for implementation.

4 Monitor and review the effectiveness of programs

- 1) Regular data are collected and analysed to provide accurate measures of performance.
- 2) Comparisons are made with strategy objectives to assess effectiveness.
- 3) Changes to implemented strategy are made as required in a timely manner to ensure outcomes are achieved.
- 4) Information obtained during monitoring and review is used to develop new strategies which are based on accumulated knowledge and experience.

Range of Variables

- Application of this competency will vary according to the organisation's size; location; organisational structure; resources; state/territory statutory requirements; business/strategic plans; and policies and practices
- Target groups may include: general public for littering; waste disposal
- Types of constraints may include: budgets; resources; timelines; expertise; available data
- Stakeholders may include: organisation; community; government; government agencies; interest groups; industry; business; community experts
- Responsible parties may include: existing staff; project staff; consultants; government agencies;
- Education strategies may include: use of existing programs from other organisations/communities; use of experts or consultants with relevant skills; action learning strategies; workshops; advertising; signage; printed materials including organisational and environmental protection authority publications etc; use of the mass media; public education
- Data may include: surveys; questionnaires; references; target group input; existing reports and programs; corporate plans
- Criteria to prioritise issues and identify targets may include: scientific data; seriousness of impact of non compliance; likelihood of action making a difference; cost effectiveness; community expectations; legislation; timeframes; budget constraints
- Resources may include: funding from outside sources; use of community resources; resources from other organisations including organisations in the region.

Evidence Guide*Critical aspects of evidence*

- Target groups identified
- Education methods for compliance identified
- Consultation on proposed program
- Finalised program.

Interdependent assessment of units

Prerequisite units: nil

Co-requisite units: nil

Underpinning knowledge

- Relevant legislation
- Public education methods
- Organisation policy and procedures for compliance
- Community networks
- Organisation structure and services
- Compliance.

Underpinning skills

- Presentation to a diverse community
- Plan and review programs
- Consultation with public/target groups
- Qualitative and quantitative research
- Program design
- Plan and organise activities
- Problem solving
- Communicate with public – adapt communication to accommodate language and cultural differences.

Resource implications

No special requirements.

Consistency in performance

Evidence will need to be gathered over time across a range of variables.

Context of assessment

On-the-job or in a simulated work environment.

Key Competencies and Application to Standards

Key Competency	1	Level 2	3
Collecting, analysing and organising information		•	
Communicating ideas and information		•	
Planning and organising activities	•		
Working with others in teams		•	
Using mathematical ideas and techniques			
Solving problems		•	
Using technology	•		

Description

This is an endorsed unit of competence from the Extractive Industries.

This unit covers the removal of bulk material by either sidecasting or loading directly into a transport system using a Front End Loader.

1 Plan and prepare for operations

- 1) Safety rules and regulations, induction including quarry rules and legislation and site specific instructions are observed.
- 2) Basic geological and technical data required to complete the allocated task is received, applied and clarified in accordance to site requirements.
- 3) Pre-start checks are carried out in accordance with manufacturer and/or site authorised procedures.
- 4) Briefings or handover details are received, interpreted and clarified in accordance with site requirements.
- 5) Work area preparation, including floor clean up, to specification level and grade requirements is co-ordinated with others and carried out to job specifications.

2 Operate front end loader

- 1) Start-up, park-up, shut-down and communication procedures are carried out in accordance with manufacturers and/or site specific requirements.
- 2) Front-end loader operations are conducted, controlled and monitored within equipment and operational limitations during the shift.
- 3) Safe operating practices, including operating controls, monitoring gauges and systems, conducting safety checks and use of two way radio for communication are carried out within manufacturers and/or site specific requirements.
- 4) Loading technique is selected and modified to appropriately meet changing work conditions which may include variable grades, work under high faces, work with varying materials, haulage units and materials handling facilities.
- 5) Operations are conducted in all weather conditions by day and night within safety requirements.
- 6) Emergency procedures are carried out in accordance with the manufacturers and/or quarry procedures.
- 7) Towing of equipment or plant is carried out safely and in accordance with the authorised equipment and connection capabilities.
- 8) Operations are carried out in accordance with site quality plan.
- 9) Work is carried out in accordance with agreed plan and outcomes and within the operating capacities/manufacturer's specifications of allocated equipment.

3 Carry out basic operator maintenance

- 1) Inspection and fault finding are conducted in accordance with manufacturer's specifications and/or site requirements and reported.
- 2) Routine operational servicing and lubrication tasks are carried out to manufacturers and/or site requirements.
- 3) Minor maintenance is carried out to manufacturer's and/or site requirements.
- 4) Records are maintained in accordance with site requirements.
- 5) Vehicle washing and housekeeping is carried out to manufacturer's and/or site requirements.
- 6) Operator support is provided during preparation for and conduct of major maintenance tasks in accordance with site requirements if required.

Range of Variables

- Briefing handover details may include but are not limited to: worksite inspection; defects on machine; nature and scope of task; adequacy of site lighting; potential hazards – overhangs, large rocks, bench edges, powerlines
- Legislative/regulative adherence shall include but is not limited to: occupational health and safety; duty of care; environmental; Mines Department/extractive industries
- Safe operating procedures may include but are not limited to: observing site speed limits; working safely around overhead powerlines; working safely around other machines and personnel
- Front End Loader type may vary
- Loading Techniques may vary depending upon units being loaded and site conditions. Materials must be loaded along centre line of vehicle to maintain the centre of gravity and to prevent segregation
- Applications may include but are not limited to: formatting maintenance of stockpiles and dumps; loading procedures; product blending
- Haulage Units may include but are not limited to: rear dump; belly-dumps; road trucks
- Materials Handling facilities may include but are not limited to: Crusher; conveyor lines; screens, feeders; bins and hoppers and stockpiles
- Weather Conditions may include but are not limited to: Visibility – day/night
- Communications may include but is not limited to: Two-way radio; Reporting defects to appropriate department/personnel.

Evidence Guide*Context*

Competency must be assessed in the normal or simulated work environment within the bounds of safety and in accordance with the approved dig and loading procedures.

Assessment shall include those aspects of the Core Competencies that are consistent with the work environment of this Unit.

Guidelines will be in line with statutory requirements, enterprise specific policies and procedures and codes of practice.

Critical Aspects and Evidence

It is essential that competence is fully observed in the critical aspects of:

- Operational safety compliance with occupational health and safety, environmental, legislation/regulation and organisational policies and procedures
- Interpreting and communicating operational information
- Start-up, walkaround, park-up, shut-down procedures and walk around inspections
- Implements to ground at shutdown
- Required loading methods including single and double-sided
- Safe loading procedures
- Use of Loadweigh technology or similar
- Floor preparation
- Operator maintenance
- Towing procedures
- Stockpile maintenance
- Implements to ground at shutdown
- Emergency Procedures
- Quality requirements
- The ability to transfer the competency to changing circumstances is identified from demonstration of the required response
- Response to emergency situations and actions.

Underpinning knowledge and skills

A knowledge of:

- Site and equipment safety requirement
- Equipment characteristics, technical capabilities and limitations
- Operational and maintenance procedures
- Basic geological and technical data.

The ability to:

- Apply eye-hand co-ordination
- Access, interpret and apply technical information
- Maintain equipment records
- Use relevant hand tools
- Apply basic diagnostic techniques
- Work in confined space
- Work wearing personal protective equipment
- Work at heights
- Operate front end loaders in accordance with site/manufacturers specifications.

Resource Implications

The resources available will be specific to this competency, the individual employer and the particular worksite as required to comply to the other elements of this unit.

Interdependence of Units

Pre-requisites – Unit MNQ.OP/01.A of Operator

Interrelationship of Units – this unit may need to be applied in conjunction with units

MNQ.OP/01.0.A;	MNQ.OP/02.A;	MNQ.OP/03.A;
MNQ.OP/04.A;	MNQ.OP/05.A;	MNQ.OP/08.A;
MNQ.OP/09.A;	MNQ.OP/10.A;	MNQ.OP/12.A;
MNQ.OP/13.A;	MNQ.OP/14.A;	MNQ.OP/28.A;
MNQ.OP/29.A		

Consistency of Performance

Competency in this unit needs to be assessed over a period of time to ensure consistency of performance in a range.

Description

This is an endorsed unit of competence from the Extractive Industries.

This unit covers the removal of bulk material by either sidecasting or loading directly into a transport unit using a shovel or excavator.

1 Plan and prepare operations

- 1) Safety rules and regulations, induction including site rules and legislation and site specific instructions are observed.
- 2) Basic geological and technical data required to complete the allocated task is received and applied in accordance to site requirements.
- 3) Pre-start checks are carried out in accordance with manufacturers and/or site authorised procedures.
- 4) Cable towers and/or crossovers are positioned/moved in accordance with site plans and requirements.
- 5) Briefings or handover details are received, interpreted and clarified in accordance with site requirements.
- 6) Work area preparation, including floor clean up and level and grade requirements is co-ordinated with others and carried out to job specifications.

2 Operate excavator

- 1) Start-up, park-up and shutdown and communication procedures are carried out in accordance with manufacturers and/or site specific requirements.
- 2) Excavator is walked and where appropriate cable positioned and monitored in accordance with manufacturer's and/or site requirements.
- 3) Safe operating practices, identification of hazards in the workplace including operating controls, monitoring gauges and systems, conducting safety checks and use of two way radio for communication are carried out within manufacturer's and/or site specific requirements.
- 4) Required loading method, single-sided and double-sided, or other appropriate method is selected and the equipment and trucks positioned to meet this requirement.
- 5) Operating procedures to fill and load are conducted, controlled and monitored in accordance with manufacturer's and/or site procedures including those covering truck loading.
- 6) Operations are conducted in all weather conditions by day or night, within safety requirements.
- 7) Emergency procedures are carried out in accordance with the manufacturer's and/or site procedures.
- 8) Work is carried out in accordance with the agreed plan and outcomes and within the operating capacities/manufacturer's specifications of the allocated equipment.
- 9) Operations are carried out in accordance with site quality plan.

3 Carry out basic operator maintenance

- 1) Inspection and fault finding are conducted in accordance with manufacturer's specifications and/or site requirements and reported.
- 2) Routine operational servicing, lubrication and housekeeping tasks are carried out to manufacturers and/or site requirements.
- 3) Minor maintenance is carried out to manufacturer's and/or site requirements.
- 4) Operator support is provided during preparation for and conduct of major maintenance tasks in accordance with site requirements, if required.
- 5) Vehicle washing and housekeeping is carried out to manufacturer's and/or site requirements.
- 6) Records are maintained in accordance with site requirements.

Range of Variables

- Briefings/handover details may include but are not limited to: worksite inspection; defects on machine; nature and scope of task; position of cable; potential hazards – large rocks, bench edges, overhangs, powerlines
- Legislative/regulative adherence shall include but is not limited to: occupational health and safety; duty of care; environmental; Mines Department/extractive industries
- Safe Operating procedures may include but are not limited to: tramming procedures; working safely around overhead powerlines; loading procedures
- Excavator may be but are not limited to: electric; diesel; rope or hydraulic and may include a face shovel
- Implements may include but are not limited to: dipper; clam; bucket; hydraulic breaker; crane hook; drop ball; ripper
- Civil works to include: stone; road works; contours; batters; scrub clearing; rehabilitation; final land forms and the inspection of associated survey papers; sealing; tailing dams; drainage; earthworks e.g. stripping/overburden
- Communications may include but are not limited to: two-way radio; reporting defects to appropriate department/personnel
- Weather conditions may include: Visibility day/night; NB: In the case of an excavator which does not load directly to a vehicle, Performance Criteria 22.2.4 does not apply.

Evidence Guide*Context*

Competency must be assessed in the normal or simulated work within the bounds of safety and in accordance with the approved procedures.

Assessment shall include those aspects of the Core Competencies that are consistent with the work environment of this Unit.

Guidelines will be in line with statutory requirements, enterprise specific policies and procedures and codes of practice.

Critical Aspects and Evidence

It is essential that competence is fully observed in the critical aspects of:

- Operational safety compliance with occupational health and safety, environmental, legislation/regulation and organisational policies and procedures
- Interpreting and communicating operational information
- Start-up, park-up and shut-down procedures
- Loading methods
- Floor preparation
- Operator maintenance
- Safe loading procedures
- Emergency procedures
- Quality requirements
- The ability to transfer the competency to changing circumstances is identified from demonstration of the required response
- Response to emergency situations and actions.

Underpinning knowledge and skills

A knowledge of:

- Site and equipment safety requirements
- Equipment characteristics, technical capabilities and limitations
- Operational and maintenance procedures
- Basic geological and technical data.

The ability to:

- Apply eye-hand co-ordination
- Access, interpret and apply all information
- Maintain equipment records
- Use relevant hand tools
- Apply basic diagnostic techniques
- Work in confined spaces
- Work wearing personal protective equipment
- Work at heights
- Operate shovel/excavator in accordance with site/manufacturers specifications.

Resource Implications

The resources available will be specific to this competency, the individual employer and the particular worksite as required to comply to the other elements of this unit.

Interdependence of Units

Pre-requisites – Unit MNQ.OP/01.A of Operator

Interrelationship of Units – this unit may need to be applied in conjunction with units

MNQ.OP/01.A;	MNQ.OP/02.A;	MNQ.OP/03.A;
MNQ.OP/04.A;	MNQ.OP/05.A;	MNQ.OP/08.A;
MNQ.OP/10.A;	MNQ.OP/12.A;	MNQ.OP/14.A;
MNQ.OP/28.A;	MNQ.OP/29.A	

Consistency of Performance

Competency in this unit needs to be assessed over a period of time to ensure consistency of performance in a range of environments, using a range of assessment instruments.

Description

This is an endorsed unit of competence from the Extractive Industries.

This unit covers the planned ripping, pushing and placing of materials using a dozer.

1 Plan and prepare for dozer operations

- 1) Safety rules and regulations, induction including site rules and legislation and site specific instructions are observed.
- 2) Basic geological and survey data required to complete the allocated task is received and applied in accordance to site requirements.
- 3) Pre-start checks are carried out in accordance with manufacturers and/or site authorised procedures.
- 4) Briefings or handover details are received, interpreted and clarified in accordance with site requirements.

2 Operate dozer

- 1) Start-up, park-up, shut-down and communication procedures are carried out in accordance with manufacturers and/or site specific requirements.
- 2) Dozer controls and functions, including blade tilt and pitch and ripper, are effectively used to complete a range of tasks.
- 3) Operations are conducted in all weather conditions by day and night within safety requirements.
- 4) Work with other equipment and personnel is carried out in accordance with authorised safety procedures and site work practices.
- 5) Emergency procedures are carried out in accordance with manufacturers and/or quarry requirements.
- 6) Towing of equipment and plant is carried out safely and in accordance with the authorised equipment and/or connection capabilities.
- 7) Pushing of scrapers is carried out safely and in accordance with manufacturer's specifications and site procedures.
- 8) Work is carried out in accordance with the agreed plan and outcomes and within the operating capacities/manufacturers specifications of the allocated equipment.
- 9) Operations are carried out in accordance with site quality plan.
- 10) Dozers are driven onto/off low loaders in accordance with site and occupational health and safety regulations and procedures.

3 Carry out basic operator maintenance

- 1) Inspection and fault finding are conducted in accordance with manufacturer's specifications and/or site requirements and reported.
- 2) Routine operational servicing, lubrication and housekeeping tasks are carried out to manufacturers and/or site requirements.
- 3) Minor maintenance is carried out to manufacturers and/or site requirements.
- 4) Operator support is provided during preparation for and conduct of major maintenance tasks in accordance with site requirements, if required.
- 5) Records are maintained in accordance with site requirements.
- 6) Vehicle washing is carried out to manufacturer's specifications and/or site requirements and environmental aspects.

Range of Variables

- This unit covers all tracked dozers and those tasks and performance criteria which are within the legal and technical limitations of wheeled dozers
- Briefings/handovers may include but are not limited to: worksite inspection; defect on machine; nature and scope of task confirmed, if necessary, by site inspection; adequacy of site lighting; potential hazards
- Legislative/regulative adherence shall include but is not limited to: occupational health and safety; duty of care; environmental; Mines Department/extractive industries
- Safe operating procedures may include but are not limited to: observing site speed limits; working safely around overhead powerlines; working safely around other machines
- Dozer Tasks may include but are not limited to: rip, push and prepare overburden, interburden, stone, sand and soil; bench and pad preparation; establish and maintain dumps in accordance with authorised requirements; carry out civil works; tree pushing; track rolling
- Rip and push may include but is not limited to: pushing over high walls; working under high walls; working in cable areas and highwall chaining; support other equipment
- Working on dumps is to include but is not limited to: creation of windrows; levelling; compaction and gradients; and include work on live stockpiles
- Civil Works is to include but is not limited to: road works; contours; batters; scrub clearing; rehabilitation final landform and the interpretation of associated survey pegs; sealing tailing dams; drainage
- Towing all mobile equipment may include but is not limited to: scrapers; rippers; rollers; compactors; harrows; scarifiers; skid mounted equipment; winching
- Communications may include but is not limited to: two-way radio; reporting defects to appropriate department/personnel.

Evidence Guide

Context

Competency must be assessed in the normal or simulated work environment within the bounds of safety and in accordance with work procedures.

Assessment shall include those aspects of the Core Competencies that are consistent with the work environment of this Unit.

Guidelines will be in line with statutory requirements, enterprise specific policies and procedures and codes of practice.

Critical Aspects and Evidence

It is essential that competence is fully observed in the critical aspects of:

- Operational safety compliance with occupational health and safety, environmental, legislation/regulation and organisational policies and procedures
- Interpreting and communicating operational information
- Start-up, park-up, shut-down and walk around inspection procedures
- Implements to ground at shutdown and park-up
- Tree pushing
- Push and rip materials
- Towing and pushing other equipment
- Dump maintenance
- Civil works
- Operator maintenance
- Emergency procedures
- Quality requirements
- The ability to transfer the competency to changing circumstances is identified from demonstration of the required response.
- Response to emergency situations and actions.

Underpinning knowledge and skills

A knowledge of:

- Site and equipment safety requirements
- Equipment characteristics, technical capabilities and limitations
- Operational and maintenance procedures
- Basic geological and technical data.

The ability to:

- Apply eye-hand co-ordination
- Access, interpret and apply all information
- Maintain equipment records
- Use relevant hand tools
- Apply basic diagnostic techniques
- Work in confined spaces
- Work wearing personal protective equipment
- Operate dozer in accordance with site/manufacturers specifications.

Resource Implications

The resources available will be specific to this competency, the individual employer and the particular worksite as required to comply to the other elements of this unit.

Interdependence of Units

Pre-requisites – Unit MNQ.OP/01.A of Operator

Interrelationship of Units – this unit may need to be applied in conjunction with units

MNQ.OP/01.A;	MNQ.OP/02.A;	MNQ.OP/03.A;
MNQ.OP/04.A;	MNQ.OP/05.A;	MNQ.OP/08.A;
MNQ.OP/10.A;	MNQ.OP/12.A;	MNQ.OP/14.A;
MNQ.OP/28.A;	MNQ.OP/29.A	

Consistency of Performance

Competency in this unit needs to be assessed over a period of time to ensure consistency of performance in a range of environments, using a range of assessment instruments.

Description

This is an endorsed unit from the Rural Industry Generic Competencies

This unit describes the work involved to transport, store and maintain records of chemical details.

1 Transport chemicals and biological agents

- 1) Transportation methods prevent damage to, or deterioration of, containers or their contents and prevent leakage or spillage of chemicals.
- 2) Transportation methods do not allow containers in proximity to people, human or stock food.
- 3) Safe working practices are employed in accordance with organisational policy, and regulation and legislation relevant to the situation are observed.

2 Store chemicals and biological agents within the workplace

- 1) Storage methods are consistent with relevant regulations and legislation.
- 2) Safe working practices are employed in accordance with organisational policy, and regulation and legislation relevant to the situation are observed.
- 3) Chemicals and biological agents are stored according to label and instructions.
- 4) Storage area and facilities are maintained to statutory or organisation requirements.

3 Record chemical purchase details

- 1) Records of purchases and storage manifests kept and are consistent with relevant regulations and legislation.

Range of Variables

- Types of chemicals may include: insecticides; fungicides; anthelmintics; bactericides; algicides; growth promotants; adjuvants; herbicides; nematicides; vaccines; rodenticides; growth regulators; bio-agents
- Types of transport methods may include: single compartment vehicles (e.g. Chemicals are not loaded in the passenger or driver compartment and should be secure from theft.)
- Storage of some biological agents may require refrigerated storage or protection from light.

Evidence Guide

- Occupational health and safety impacts
- Adherence to occupational health and safety requirements must be observed at all times, specifically personal protective equipment, manual lifting practices and workplace safety requirements.

A basic working knowledge is required of:

- The use of chemicals and biological agents, specifically:
 - ◊ the requirements and responsibilities in relation to relevant state legislation relating to the transport, use, storage and disposal of agricultural and/or veterinary chemicals (including the recognition of the label as a legal document)
 - ◊ the responsibilities of the user of agricultural and/or veterinary chemicals, risks if misuse and liabilities flowing from misuse in terms of the relevant Acts of the Commonwealth and of the particular states and territories (including the variation between states), also specific industry requirements
- those agricultural, biological agents and/or veterinary chemicals, classified as dangerous goods
- the requirements and responsibilities in relation to relevant state legislation relating to the correct signage, security and identification of chemical storage areas
- the requirements and responsibilities in relation to relevant state legislation relating to the correct storage facilities and maintenance procedures.

The ability to:

- Carry out stocktakes and maintain orderly records of chemicals and chemical usage.

Description

This is an endorsed unit from the Rural Industry Generic Competencies

This unit describes the work involved to safely prepare chemicals for application, including calculating and measuring quantities.

1 Select correct chemical

- 1) Chemical and biological agents selected are as determined or prescribed and are consistent with user requirements.

2 Prepare application requirements

- 1) Mixing procedures comply with label directions and occupational health and safety regulations are used.
- 2) Compatibility of products and quality of water is determined.
- 3) Calculations comply with label directions.

3 Fill application equipment

- 1) Measurement and decanting of substances complies with label directions and accepted industry or organisational practice.
- 2) Tools, equipment, and personal protection equipment appropriate to the task are selected and used to industry or organisational standards.
- 3) Safe working practices are employed and regulations and legislation relevant to the situation and mixing site are observed.

Range of Variables

- Safe working practice may include: identifying hazard levels; handling, mixing and applying chemicals; use and application of protective equipment and clothing; selecting appropriate application conditions; adhering to legal requirements and duty of care; reading and interpreting a chemical list; transport and storage of chemicals; disposal of containers and unwanted chemicals
- Application equipment may include: any item designed to deliver a known quantity of chemical and consistent with application methods including – aerosol, airshear, hydraulic, centrifugal, wick wiping, dipping. Injection, oral, backline, jetting, fogging, electrostatic, soil injection, chemigation
- Calculations may include: determination from the “directions of use” table from the label, and then using this information to calculate quantity of chemical needed to fill vat, apply per hectare, dose per animal, dilution rate, volume of spray mixture to be delivered by the equipment
- Tools and equipment may include: assorted hand tools; measuring jugs and cylinders; scales; syphoning equipment
- Personal protective equipment may include: boots; overalls; chemical resistant gloves; aprons; face shields; respirators; hats; self-contained breathing apparatus.

Evidence Guide

A basic working knowledge is required of:

- The preparation of chemicals and biological agents, specifically:
 - ◊ personal protection equipment and first aid procedures required for the use of agricultural and/or veterinary chemicals
 - ◊ safe handling practices to protect the operator apart from protective clothing
 - ◊ practices required during farm chemical use to protect the environment, including waterways and irrigation drains
 - ◊ paths of entry of poisons into the body and methods of limiting exposure and the relevance of poison schedules as they relate to agricultural and veterinary chemicals.

The ability to:

- safely and competently mix and handle chemicals and biological agents
- interpret chemical labels and labelling standards.

Assessment Guide

The unit is to be demonstrated in an agricultural workplace or in a situation which reproduces agricultural workplace conditions.

Description

This is an endorsed unit from the Rural Industry Generic Competencies

This unit describes the work involved to safely check and maintain both personal and application equipment used for the application of chemicals and biological agents.

1 Check and maintain application equipment for chemical and biological agents

- 1) Application equipment is prepared and adjusted for use appropriate to the situation.
- 2) Damage, wear or malfunctions of equipment are identified and repaired/replaced or reported to the appropriate person.
- 3) Pre and post-operational checks/maintenance on applications equipment are carried out according to operator's manual.

2 Check and maintain personal protection equipment

- 1) Personal protective equipment is selected prepared and adjusted for use appropriate to the situation.
- 2) Damage, wear, or malfunctions of personal protective equipment is identified and repaired/replaced or reported to the appropriate person.
- 3) Pre and post-operational checks/maintenance on applications equipment are carried out according to operator's manual.

Range of Variables

- Equipment to be checked may include: nozzles; regulators/gauges; tractor cabin filters; spray and jetting races; engines; protective clothing and equipment
- Personal protective equipment may include: boots; chemical resistant gloves; face shields; hats; overalls; aprons; respirators; self-contained breathing apparatus.

Evidence Guide

A basic working knowledge is required of:

- The use of chemicals and biological agents, specifically:
 - ◇ personal protection equipment and first aid procedures required for the use of agricultural and/or veterinary chemicals
 - ◇ practices required during farm chemical use to protect the environment, including waterways and irrigation drains
 - ◇ routes of exposure of poisons into the body and methods of limiting exposure and the relevance of poison schedules as they relate to agricultural and veterinary chemicals.

The ability to:

- safely complete prescribed equipment maintenance procedures in line with industry and organisational standards.

Assessment Guide

The unit is to be demonstrated in an agricultural workplace or in a situation which reproduces agricultural workplace conditions.

Description

This is an endorsed unit from the Rural Industry Generic Competencies

This unit describes the work involved to safely apply agricultural chemicals using a range of methods.

1 Select application equipment

- 1) Application methods/equipment appropriate to the chemicals/biological agents and situation are selected, adjusted and calibrated to industry or organisation standards.
- 2) Application methods/equipment are consistent with label specifications and occupational health and safety regulations.

2 Use personal protective equipment

- 1) Tools, equipment, and personal protective equipment appropriate to the task are selected, and used as determined by label directions, material safety data sheet and industry or organisation standards.

3 Use application equipment

- 1) Potential and existing hazards are identified and minimised safely in a manner consistent with accepted industry practices and/or reported to supervisor or an appropriate authority.
- 2) The workplace is maintained to an accepted industry standard and appropriate steps to ensure public safety are selected and used.
- 3) Safe working practices determined by industry or organisation are employed and regulations and legislation relevant to the situation are observed.
- 4) Application equipment is used to accurately and effectively apply the required dose to the target.
- 5) Application details are recorded in accordance with organisation policy, legislative requirements and industry practice.
- 6) Weather conditions are assessed as suitable for the application of selected chemical.
- 7) Re-entry, withholding, plant back and restocking periods are observed as determined by label directions.

Range of Variables

- Application methods may include: aerosol, airshear, hydraulic, controlled droplet applicator, wick wiper, dipping, injection, oral, backline, jetting, fogging, electrostatic, soil injection
- The workplace may include any area at which chemical use is carried out
- Re-entry is defined as the minimum period which must elapse from the last day of application until the first day that person may enter sprayed area without wearing personal protective equipment
- Withholding period is defined as the minimum period which must elapse from the last day of application until the first day of harvest, slaughter, or grazing
- Plant back is defined as the period which must elapse from the last day of application until the first day that planting can again be undertaken in that area
- Restocking is defined as the minimum period which must elapse from the last day of application until the first day of returning animals to area for grazing
- Personal protective equipment may include: boots; chemical resistant gloves; face shields; hats; overalls; aprons; respirators; self-contained breathing apparatus.

Evidence Guide

A basic working knowledge is required of:

- The application of chemicals and biological agents, specifically:
 - ◊ personal protection equipment and first aid procedures required for the use of agricultural and/or veterinary chemicals
 - ◊ practices required during farm chemical use to protect the environment, including waterways and irrigation drains
 - ◊ routes of exposure of poisons into the body and methods of limiting exposure and the relevance of poison schedules as they relate to agricultural and veterinary chemicals
 - ◊ the first aid procedure to carry out in the event of human poisoning by agricultural and/or veterinary chemicals.

The ability to:

- Safely and competently operate the range of application equipment on the property
- Transport chemicals and biological agents
- Store chemicals and biological agents within the workplace
- Maintain and clean chemical equipment in line with established industry standards
- Read complex information including charts, tables and weather maps
- Read and interpret written material appropriately for local conditions
- Measure accurately
- Calculate ratios
- Maintain accurate record system
- Report factual information accurately, according to reporting requirements.

Assessment Guide

The unit is to be demonstrated in an agricultural workplace or in a situation which reproduces agricultural workplace conditions.

The following unit is a prerequisite to this unit:

- Prepare chemicals and biological agents

The following units may be assessed with this unit:

- Clean up following application of chemicals and biological agents
- Notify authorities

Description

This is an endorsed unit from the Rural Industry Generic Competencies

This unit describes the work involved to safely clean up chemicals and biological agents after application in the forest.

1 Empty and clean equipment and containers according to label directions

- 1) Tools, equipment and clean up methods appropriate to chemicals and/or biological agents are selected and used.
- 2) Methods are consistent with label directions.
- 3) Disposal of containers and unused chemicals and/or biological agents are consistent with occupational health and safety and environmental legislation, label directions and/or regulations.

2 Use personal protective equipment

- 1) Personal protective equipment appropriate to the task are selected, calibrated and used as determined by label directions, material safety data sheet or industry or organisation standards.
- 2) Safe working practices are employed and regulations and legislation relevant to the situation are observed.

Range of Variables

- Safe working practices may include: identifying hazard levels; handling, mixing and applying chemicals; use and application of personal protective equipment and clothing; selecting appropriate application conditions; adhering to legal requirements and duty of care; reading and interpreting a chemical label; transport and storage of chemicals; disposal of containers and unwanted chemicals; syringes, needles and veterinary appliances
- Methods of clean up may include: decontamination of equipment with washing soda, detergent, etc, triple rinsing of empty containers
- Legislation, regulation, and standards may include:

Evidence Guide

A basic working knowledge of:

- The clean up of chemicals and biological agents, specifically:
 - ◇ the requirements and responsibilities in relation to relevant state legislation relating to the transport, use, storage and disposal of agricultural and/or veterinary chemicals (including the recognition of the label as a legal document).

The ability to:

- calmly and efficiently cope with clean up procedures
- work in an environmentally safe manner.

Clean up following application of chemicals and biological agents

RUA AG2010CH A

Assessment Guide

The unit is to be demonstrated in an agricultural workplace or in a situation which reproduces agricultural workplace conditions.

The following units should be assessed with this unit:

- Apply chemicals and biological agents
- Notify authorities

Description

This is an endorsed unit from the Rural Industry Generic Competencies

This unit describes the work involved to safely, effectively, and responsibly manage a chemical spillage/leakage, including notifying the relevant authorities.

1 Implement correct procedures following a chemical spillage/leakage

- 1) Chemical spillage/leakage is isolated from stock, vehicles and people as determined by industry or workplace standards.
- 2) Chemical spillage/leakage is contained as determined by industry or workplace standards or regulatory authorities.
- 3) Chemical formulation is identified and appropriate decontamination method followed.
- 4) Chemical spillage/leakage is decontaminated using approved methods.
- 5) Chemical is cleaned up and disposed of in an approved manner.
- 6) Procedures follow material safety data sheet information.
- 7) Advice is sought from appropriate authorities.

2 Use personal protective clothing and equipment

- 1) Tools, equipment, and personal protective equipment appropriate to the task are selected, calibrated and used as determined by label directions, bacterial safety data sheets and industry or workplace standards.

3 Notify authorities of chemical spill

- 1) Appropriate authorities are notified.
- 2) Spillage extent is assessed and appropriate chemical spill/leakage report is developed.

Range of Variables

- Appropriate authorities may include: emergency services; government departments; local government agencies; chemical manufacturers
- Types of formulation may include: emulsifiable concentrates; gases; baits; pellets; boluses; vaccines; antibiotics; liquid concentrates; powders; granules; suspension concentrates
- Approved methods may include: collection of waste by appropriate authorities;
- Decontamination methods may include: use of appropriate material to absorb spillage/leakage; chemical treatment of spillage/leakage area; wash down of spillage/leakage area.

Evidence Guide

A basic working knowledge of:

- The application of chemicals and biological agents, specifically:
 - ◊ personal protection equipment and first aid procedures required for the use of agricultural and/or veterinary chemicals
 - ◊ the requirements and responsibilities in relation to relevant State legislation relating to the transport, use, storage and disposal of agricultural and/or veterinary chemicals (including the recognition of the label as a legal document).

The ability to:

- read and interpret chemical and safety information including labels
- calmly and efficiently deal with problems of spillage/leakage
- ensure that all safety and environmental considerations are observed
- operate within all relevant legislative and environmental constraints.

Occupational health and safety issues:

- The rights and responsibilities of employers and employees under the relevant state and workplace occupational health and safety legislation
- Codes of practice for: manual handling; the control of workplace hazardous substances
- Occupational health and safety requirements for the safe use of chemical and biological agents
- On-site occupational health and safety procedures may include: provision of personal protective clothing and equipment; provision of sunscreen for outdoor work
- Occupational health and safety requirements must be adhered to at all times, specifically personal protective equipment, manual lifting practices and workplace safety requirements.

Assessment Guide

Assessment could be in conjunction with the following unit:

- Clean up following application of chemicals and biological agents

Description

This is an endorsed unit from the Dairy sector of the Rural Industries National Competency Standards.

Competency in carrying out basic fencing operations, safe and effective maintenance of fencing.

1 Maintain basic fencing tools

- 1) Tools and equipment are stored appropriately after use.
- 2) Service tasks for fencing equipment are performed according to the manufacturer's specifications.
- 3) Basic maintenance and repairs to tools are carried out safely to restore tool function to its effective range.

2 Make repairs to farm fences

- 1) Tools appropriate for the task being undertaken are selected and used.
- 2) Tools are handled and transported in a manner which minimises possible damage or loss and are used only for the purpose for which they were designed.
- 3) Replacement posts are installed consistent with the existing fence, height and type.
- 4) Soil is replaced and rammed so that the post is secure.
- 5) Wire is strung, mounted and fixed according to instructions.
- 6) Gates are repaired according to instructions.
- 7) The site is left tidy by replacing dirt and removing materials.
- 8) Safe work practices are employed.

3 Dismantle an existing wire fence

- 1) Tools appropriate for the task are identified and used safely.
- 2) All reusable materials are identified, recovered and removed without further damage.
- 3) The site is cleared with all non-reusable materials identified and disposed of and post holes firmly filled.
- 4) Safe work practices are employed.

Range of Variables

- Fence repairs may include: replace posts; rejoin and restrain wires; gate hinges; gate chains; gates;
- Tools may include: post driver; post hole borer; wire strainers; fencing pliers
- Fencing wire may include: plain; barbed; ringlock; netting
- Knots for use in joining fence wire may include: figure 8; pin and loop; Donald; post tie and double loop.

Evidence Guide

Occupational health and safety issues that impact upon the performance of this unit

- Relevant occupational health and safety hazards identification, risk assessment and risk control measures. These include:
 - ◊ Systems and procedures for the safe operation and maintenance of machinery and equipment, including hydraulics and guarding of exposed moving parts
 - ◊ Safe operation of other vehicles
 - ◊ Safe manual handling systems and procedures, especially when handling posts and coils of wire
 - ◊ Protection from hazardous noise
 - ◊ Safe systems and procedures for outdoor work, including protection from solar radiation
 - ◊ Safe systems and procedures to protect against electrical hazards, underground cables need to be located and marked, electrical fencing equipment properly maintained
 - ◊ Selection, use and maintenance of relevant personal protective clothing and equipment
 - ◊ The rights and responsibilities of employers and employees under the relevant state and workplace occupational health and safety legislation
 - ◊ Codes of practice for: manual handling.
- Occupational health and safety requirements for the safe use of farm vehicles, machinery, tools and equipment, such as Australian Standards for:
 - ◊ guards for agricultural tractor PTO drives
 - ◊ agricultural wheeled tractors – Roll Over Protective Structures (ROPS) in service safety inspection and testing of electrical equipment.

Underpinning knowledge and skills

- The uses and structure of a range of conventional fence types
- The uses of standard fencing materials, equipment and tools
- Common fencing hazards and safety precautions that are necessary when fencing, particularly those related to straining wire and use of tools
- Employ safe working practices
- Use time efficiently
- Maintain physical fitness
- Identify standard materials, components, equipment and tools for conventional and electric fencing.

Assessment Guide

Competency is to be demonstrated in an agricultural workplace or in a situation which reproduces agricultural workplace conditions.

RUA AG3522DY A Implement farm improvements, construction and repairs

Description

This is an endorsed unit from the Dairy sector of the Rural Industries National Competency Standards.

Implement improvements, construction and repairs.

1 Regularly assess conditions of structures

- 1) Structures are checked for soundness from pests, corrosion and damage by the elements.
- 2) The condition of structures is reported and recorded according to organisation requirements.

2 Repair structures

- 1) A range of window repairs is carried out.
- 2) Repairs to a range of internal and external walls are carried out.
- 3) Roof surfaces are repaired.
- 4) Basic masonry/concrete repairs are carried out.
- 5) Basic welding repairs to structures are performed.

3 Fabricate structures

- 1) Suitable plant and equipment is selected and operated in workshops and in the field.
- 2) Appropriate metal and wood jointing techniques are used.
- 3) Construction follows instructions on the plan.
- 4) Construction meets plan dimensions.
- 5) Tools and equipment are used safely.

4 Dismantle structures

- 1) Obsolete structures are dismantled safely.
- 2) Materials not required are disposed of to maintain a neat and fire safe area.

5 Maintain roads and tracks

- 1) The appropriate type and quantity of materials are selected for road and track maintenance.
- 2) The required repairs are carried out.
- 3) The effectiveness of the repairs is checked.
- 4) Repairs are recorded according to organisation specifications.

Range of Variables

- Structures may include: Buildings, yards, fences, water supply systems, roads, tracks, soil conservation works, irrigation and drainage channels, trellises, shelters and shade cloth
- Window repairs may include: replacement of glass panes or louvres, replacement of insect screens or flywire, repair or replacement of window sashes
- Internal or external wall repairs may include: refastening of cladding, use of brickwork and bricklaying, use of sealant as required, replacement of sheets as necessary, correct use of levels
- Roof surface repairs may include: corrugated iron, tiles, colorbond, guttering and spouting, downpipes

- Basic concrete or masonry repairs should include: correct use of levels, correct design, measurement and installation of formwork, preparation of damaged masonry, correct mix of cement for a given concreting situation, correct laying and tying of reinforcing, finish surface to match existing wall/structure, or as suitable non-slip surface for floor path areas
- Basic welding repairs should include: complying with safety standards, setting up plant without error, testing for leaks, butt welding, phillips welding, correct flame settings, closing down welding equipment, neat and weatherproof finish
- Material for road and track repairs should: Use surface rock (rather than gravel) for livestock use, be selected on advice from contractors, result in a non-slippery surface
- Required repairs for roads and tracks should include: adequate camber for drainage, thorough compacting of materials, safe operations of vehicles and implements, avoidance of damage to property and equipment
- Effectiveness of repairs to roads and tracks may be checked according to the following: water to drain freely from the road surface, potholes are filled and compacted, culverts or sump holes are cleared to allow effective drainage, surface is suitable for ongoing use by vehicles, minimum ongoing maintenance is required for a range of weather conditions
- Structural maintenance is co-ordinated with licensed trades to meet state and local government requirements.

Evidence Guide

Key outcome

Competency in implementing improvements, construction and repairs.

Occupational health and safety issues that impact upon the performance of this unit

Relevant occupational health and safety hazards identification, risk assessment and risk control measures. These include:

- Safe systems and procedures for outdoor work, including protection from solar radiation
- Safe operation of other vehicles
- Safe manual handling systems and procedures
- Safe systems and procedures for working at heights, including roof framework and cladding
- Systems and procedures for the safe operation and maintenance of machinery and equipment, including hydraulics and guarding of exposed moving parts
- Safe systems and procedures for the safe use of power tools
- Safe systems and procedures for the safe use of hand tools
- Protection from hazardous noise
- Protection from organic and other dusts
- Safe systems and procedures to protect against electrical hazards, including overhead power lines and electrical fittings
- Selection, use and maintenance of relevant personal protective clothing and equipment
- The rights and responsibilities of employers and employees under the relevant state and workplace occupational health and safety legislation
- Manual handling codes of practice for:
 - manual handling; the control of workplace hazardous substances
 - Occupational health and safety requirements for the safe use of chemical and biological agents
 - Occupational health and safety requirements for the safe operation of vehicles, machinery and equipment.

RUA AG3522DY A Implement farm improvements, construction and repairs

Holistic outcome

The ongoing repair and maintenance of existing infrastructure and the addition of improvements.

Critical underpinning knowledge

- The machinery and equipment required for farm improvements, construction and repairs
- Building materials
- Basic brickwork and bricklaying
- Concreting
- Welding
- Wood and steel fabrication
- State and local government requirements regarding construction and structural improvements
- Drainage requirements around structures, tracks and roads
- Relevant occupational health and safety legislation, regulations and codes of practice.

Critical underpinning skills

- Assess the nature and priority of required repairs and maintenance
- Report required repairs and maintenance to management
- Use a range of workshop, hand and power tools
- Draw basic plans
- Read plans
- Complete a range of earthworks to specification
- Fabricate in wood and steel
- Weld using oxy and arc equipment
- Mix cement for a given situation
- Lay and tie reinforcing to specifications
- Record and report on repairs
- Employ safe work practices.

Assessment Guide

Assessment of this unit is to be conducted in accordance with this Assessment Guide and the endorsed "Assessment Guidelines" for the Qualifications in Agriculture.

Authority managing and conducting assessment, and issuing qualifications

Authorised Registered Training Organisation (RTO).

Special outcomes of assessment for purposes of licensing by a government or other authority

There are no licensing requirements for this unit.

Where the unit is assessed

Competency is to be demonstrated in an agricultural workplace or in a situation that reproduced agricultural workplace conditions.

Resources required beyond those normally found in a functioning workplace

The range of resources required for assessment can be provided either in the workplace or a simulated working environment structured in a training situation.

Implement farm improvements, construction and repairs **RUA AG3522DY A**

Resources may include:

- appropriate materials for repairs and fabrication
- appropriate vehicles, tools and equipment
- a range of structures and roads and tracks requiring repairs or maintenance
- a plan and specifications for the repairs, fabrication or maintenance
- relevant technical information
- relevant state and local government regulations
- relevant occupational health and safety legislation, regulations and codes of practice
- assistance where necessary
- personal protective clothing and equipment.

Description

This is an endorsed unit from the Dairy sector of the Rural Industries National Competency Standards.

Conventional fencing is designed and constructed safely and effectively within the forest plan; Competency in designing and constructing conventional fencing.

1 Draw up fencing plans

- 1) Fences are sited in relation to natural features and proposed use.
- 2) Site plans are prepared on forest area maps.

2 Determine fence specifications

- 1) Appropriate materials are selected for the purpose.
- 2) Posts, droppers, wire and staple requirements are calculated and costed.

3 Arrange fencing materials

- 1) Orders for materials are placed with suppliers.
- 2) Materials are delivered and stored according to organisation requirements.

4 Install posts, wire and droppers

- 1) Fence lines are marked out according to the plan.
- 2) End assemblies are constructed according to the plan.
- 3) A marker wire is set up.
- 4) Intermediate posts are installed along the marker wire.
- 5) Wires are attached to posts and joined and strained.
- 6) Droppers are laid out and attached to the wires.

5 Attach and swing gates

- 1) Gates are attached to gate posts.
- 2) Gates are hung, swung and secured for closure.

Range of Variables

- Issues affecting fence design and construction may include: material costs; stocking pressures and type of stock control required; soils; topography; water; paddock shape; machinery use and access
- Fencing materials may include: posts; droppers; wire; staples; gates; hinges; chains
- Fencing tools and construction equipment may include: post hole diggers; post drivers; fencing pliers; wire strainers; wire cutters; wire spinners; shovel; crowbar/rammer; brace and bit; drill
- Fencing wire may include: plain; barbed; ringlock; netting
- Knots for use in joining fence wire may include: figure 8; orange; pin and loop; Donald; post tie and double loop.

Evidence Guide

Occupational health and safety issues that impact upon the performance of this unit

- Relevant occupational health and safety hazards identification, risk assessment and risk control measures. These include:
 - ◇ Systems and procedures for the safe operation and maintenance of machinery and equipment, including hydraulics and guarding of exposed moving parts
 - ◇ Safe operation of other vehicles
 - ◇ Safe manual handling systems and procedures, especially when handling posts and coils of wire
 - ◇ Protection from hazardous noise
 - ◇ Safe systems and procedures for outdoor work, including protection from solar radiation
 - ◇ Safe systems and procedures to protect against electrical hazards, underground cables need to be located and marked
 - ◇ Selection, use and maintenance of relevant personal protective clothing and equipment
 - ◇ The rights and responsibilities of employers and employees under the relevant state and workplace occupational health and safety legislation
 - ◇ Codes of practice for: manual handling.
- Occupational health and safety requirements for the safe operation of farm vehicles, machinery and equipment, such as Australian Standards for:
 - ◇ guards for agricultural tractor PTO drives
 - ◇ agricultural wheeled tractors – Roll Over Protective Structures (ROPS)
 - ◇ chainsaw safety requirements
 - ◇ guide to safe working practices for chainsaws
 - ◇ brushcutter safety requirements
 - ◇ guide to safe working practices for brushcutters
 - ◇ in service safety inspection and testing of electrical equipment.

Critical underpinning knowledge

- Issues affecting fence design and construction
- Planning fencing in relation to the forest area plan
- The fencing design process
- A range of fencing designs, construction methods and materials
- Fencing construction tools and equipment
- Fencing materials requirements and costings
- Common fencing hazards and safety precautions that are necessary when fencing, particularly those related to straining wire and use of tools
- Relevant occupational health and safety legislation, regulations and codes of practice.

Critical underpinning skills

- Draft fencing plans and specifications
- Read plans
- Consult with and report to management
- Cost fencing plans
- Purchase supplies
- Operate fencing tools and construction equipment for conventional fencing
- Mark fencing lines
- Clean up a fencing site
- Clean up tools and equipment and safely store
- Keep records
- Employ safe work practices.

Assessment Guide

Where the unit is assessed

Competency is to be demonstrated in an agricultural workplace or in a situation which reproduces agricultural workplace conditions

Resources may include:

- Access to an area requiring construction of conventional fencing including gate(s)
- Appropriate vehicles, fencing materials, tools and construction equipment
- Sample fencing designs and plans
- Fencing manufacturers manuals and catalogues
- Demonstration of fencing best practice and safe work practices
- Assistance if required
- Relevant State legislation and regulations regarding fencing
- Relevant occupational health and safety legislation, regulations and codes of practice
- Personal protective clothing and equipment.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit describes the provision of basic maintenance to a growing crop.

At this level all work is likely to be under direct supervision with regular checking. Competency at this level involves the application of knowledge and skills to a limited range of tasks and roles. Recording and reporting is undertaken within established routines using methods and procedures that are predictable. There is a specified range of contexts where the choice of actions required is made quite clear by the supervisor.

1 Install crop support components

- 1) Tools are chosen appropriate to the task being undertaken, used in accordance with guidelines and safe working practices are employed.
- 2) Supports are secure, straight, stable, spaced, oriented, placed and tensioned as defined by supervisors specifications.
- 3) Construction methods employed are in accordance with plans and specifications.

2 Care for growing stock

- 1) Stock treatments carried out neatly, cleanly and in a fashion which causes no disturbance.
- 2) Crop support components adjusted and/or repaired in accordance with supervisors instructions.

3 Tend to growing media

- 1) Fertiliser spread evenly and in volume specified by supervisor.
- 2) Weeds removed and soil cultivated in accordance with the requirements of the crop and soil conditions.
- 3) Equipment operation and work practices conform with occupational health and safety regulations.

4 Place irrigation system and components

- 1) Components located according to supervisors specifications.
- 2) Components assembled and connected securely, system operation tested in accordance with supervisors specifications.
- 3) Practices employed maintain organisation standards of disturbance and damage to crops.

Evidence Guide*Critical underpinning knowledge:*

- Crop support systems and their erection
- Methods and reasons of treating growing stock including pruning and dis-budding techniques
- Water application techniques.

Critical underpinning skills:

- Install crop support components
- Care for growing stock
- Tend to growing media
- Place irrigation systems and components.

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the national module HOR105 *Crop care* or equivalent
- Completion of the Learning Guide for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include

- Relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills has been integrated and applied in a workplace setting or other specified setting.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

Most work in forestry requires work at a site removed from the depot. Workers at this level are involved in loading and unloading vehicles with materials, tools and equipment, preparing safety barriers and cleaning up after the days work is completed.

The work is likely to be under direct supervision with regular checking. Competency at this level involves the application of knowledge and skills to a limited range of tasks. There is a specified range of contexts where the choice of actions required is quite clear.

1 Prepare tools and equipment for use

- 1) Tools/equipment are identified from list and/or supervisor's instructions.
- 2) Lifting and carrying of tools/equipment is performed in accordance with occupational health and safety guidelines and without damage to equipment and vehicle.
- 3) Loads are secured to prevent movement during transit.
- 4) Tools/equipment are set out on site in a safe manner to ensure the safety of on site persons and the public.

2 Establish signage and safety barriers

- 1) Signage and safety barriers are located in accordance with the site plan and/or supervisor's instructions.
- 2) Signage and safety barriers are erected in accordance with organisation guidelines.

3 Clear debris from a work site

- 1) Debris produced during operations is stacked in designated area in accordance with organisation guidelines.
- 2) Debris is prepared and processed in accordance with supervisor's instructions and/or manufacturer's instructions.

4 Clean work site upon completion of work program

- 1) All materials, tools and refuse are collected and stockpiled for removal/disposal.
- 2) Site is returned to a tidy and undamaged condition in accordance with organisation guidelines.
- 3) Tools and equipment are cleaned, maintained and stored consistent with manufacturer's specifications and organisation guidelines.

5 Observe safe work practices

- 1) Work habits reflect knowledge and understanding of occupational health and safety responsibilities.
- 2) Protective clothing is worn and safety equipment is used in accordance with company safety plan/policy.
- 3) Work environment is kept tidy and free of hazards in accordance with company safety plan/policy.
- 4) Dangers and hazards within the work place are recognised and reported to the appropriate person.
- 5) Machinery is assessed for safe use and hazards notified to supervisor.
- 6) Correct manual handling techniques are used when lifting or moving heavy loads.

Range of Variables

- Preparation of tools may include loading and unloading, checking for requirements, checking for obvious damage or malfunction
- The work-site may include: roads, nurseries and forests
- Equipment to be loaded/unloaded may include hand tools, wheelbarrow, small machinery, knapsacks sprayers, bulk material such as soil and mulch, containerised plants, branches and other felled material, landscape construction materials such as timber, bricks or stone, personal safety equipment
- Dangers may include traffic, overhead power lines, working near the public, working near machinery and vehicles.

Evidence Guide

Workers should be able to demonstrate a knowledge of:

- Occupational health and safety requirements relating to materials handling
- Occupational health and safety rules and regulations in the workplace
- Australian Standard AS 1742 Part 3 1985 Australian Code of Practice, Worksite Traffic Management
- Health risks associated with working in a landscape environment such as soil borne diseases, insect and spider bites, sharp objects, traffic
- Types and placement methods relating to safety barriers and signage.

Critical underpinning knowledge

- Prepare tools and equipment for use
- Establish signage and safety barriers
- Clear debris from a work site
- Clean work site upon completion of work program
- Observe safe work practices.

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the national modules HOR108 *Basic workplace maintenance* and HOR109 *Work site preparation* or equivalent
- Completion of the Learning Guide for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include:

- Or other specified setting, relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills have been integrated and applied in a workplace setting.

Occupational health and safety issues

The nature of this operation requires workers to exercise care in regard to manual handling and safe lifting techniques, working with a range of hand tools. Extreme care must be taken when working on public roads.

Environmental issues

Environmental issues for workers at this level include disposal of waste material.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit describes the assistance that is provided by workers at this level in production forestry nurseries.

1 Perform maintenance tasks to parent plants

- 1) Water is applied to parent plants in accordance with daily watering plan.
- 2) Rubbish and litter are removed and disposed of, parent plants and surroundings are maintained in a clean and tidy fashion in accordance with organisation guidelines.
- 3) Weeds are removed from around cultivated plants in accordance with supervisor's instructions.
- 4) Changes in parent plant appearance or emergence of pests or diseases are reported to the appropriate person in accordance with organisation guidelines.

2 Prepare materials for propagation

- 1) Containers for propagation are prepared in accordance with supervisor's guidelines.
- 2) Cleaning procedures are performed and hygiene practices followed in accordance with organisation guidelines.

3 Place propagated material at the propagation site

- 1) Propagation material is obtained and transported to propagation site in accordance with supervisor's instructions.
- 2) Plants are placed in the place, pattern, and at the spacing designated by the supervisor.
- 3) Hygiene practices are followed in accordance with organisation guidelines.
- 4) Safe lifting techniques employed and manual handling techniques are efficient in accordance with organisation occupational health and safety guidelines.

4 Perform blocking up

- 1) Plants are placed in the place, pattern, and at the spacing designated by the supervisor.
- 2) Safe lifting techniques employed and manual handling techniques are efficient in accordance with organisation occupational health and safety guidelines.
- 3) Hygiene practices are followed in accordance with organisation guidelines.

Range of Variables

- Parent plants may include plants that are hardy, in plentiful supply, on-site
- Equipment used in the propagation process may include wheelbarrow, trolley, mechanical trolley, secateurs, media trays, water spray container, dibblers, rubbish bins
- Preparing/planting containers may include gathering trays and containers, locating and collecting media, filling containers with media.

Evidence Guide

Workers should be able to demonstrate a knowledge of:

- Manual handling techniques with regard to loads
- Principles and practices of hygiene in a forest nursery context
- Basic plant structure.

Critical underpinning knowledge

- Perform maintenance tasks to parent plants
- Prepare materials for propagation
- Place propagated material at the propagation site
- Perform blocking-up
- Listen and follow routine instructions.

Occupational health and safety issues

Occupational health and safety issues associated with this unit include working with hand tools, safe lifting and manual handling techniques and working with due regard to the safety of others.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit describes basic maintenance work undertaken to workplace structures where either the specialist skills of another trade are not warranted or available.

Maintenance work is likely to be under routine supervision with intermittent checking. Responsibility for some roles and co-ordination within a team may be required. Competency at this level involves the application of knowledge and skills to a range of maintenance tasks. Property and structure maintenance is usually within established routines, methods and procedures.

1 Perform routine maintenance to properties and structures

- 1) Water supply is checked for operation and pollution, and minor repairs are undertaken in accordance with supervisor's directions.
- 2) Paths, tracks and roadways are checked for potholes, weeds and effective drainage, minor repairs undertaken in accordance with supervisor's directions.
- 3) Fences checked for holes or other damage and minor repairs undertaken in accordance with supervisor's directions.
- 4) Tools chosen are appropriate to the task being undertaken, used in accordance with guidelines, and safe working practices are employed in accordance with organisation policy.

2 Perform minor repairs to properties and structures

- 1) Damage to building cladding and structural finishes is identified and repaired in accordance with supervisor's directions.
- 2) Tools chosen are appropriate to the task being undertaken, used in accordance with guidelines, and safe working practices are employed.
- 3) Site is tidied and tools and materials are stored in accordance with organisation policy.

Range of Variables

- Cladding may include: corrugated iron; weatherboards; glass; shade cloth; plastic; cement sheeting
- Drains may include: agricultural drains; spoon drains; culverts
- Fences may include: picket; post and wire; brick; hedges
- Property may include fences; drains; waterways; dams; roads; car parks; vegetation; soil; windbreaks; paths; loading bays
- Structural finishes may include: paint; stains
- Structures may include: buildings; greenhouses; igloos; potting houses; pergolas; poly tunnels; shade houses; sheds; benches; cool rooms; glass houses; staff rooms; water tanks.

Evidence Guide

Critical underpinning knowledge:

- The operation of water taps and reticulation systems
- Types of building cladding and finishes, purpose and use.

Critical underpinning skills:

- Perform routine maintenance to properties and structures
- Perform minor repairs to properties and structures.

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the national module HOR224 *Property and Structure Maintenance* or equivalent
- Completion of the Learning Guide for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include

- Relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills has been integrated and applied in a workplace setting or other specified setting.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit is concerned with the repair and replacement of irrigation system components in a forestry nursery.

Work is likely to be under routine supervision with intermittent checking. Responsibility for some roles and co-ordination within a team may be required. Competency at this level involves the application of knowledge and skills to a range of tasks and roles. Competencies are usually within established routines, methods and procedures.

1 Undertake irrigation system maintenance

- 1) Servicing is carried out according to manufacturer's recommended service schedule.
- 2) Faults are diagnosed from mechanical symptoms and repaired where they do not require specialist attention in accordance with organisation guidelines.
- 3) System operation is checked for flow, distribution, volume and frequency in accordance with system specification.

Range of Variables

- Irrigation systems may include mains pressure, low pressure, below ground, above ground, spray systems, dripper systems, computerised irrigation systems, shrub sprays, manual operation of system controllers
- Irrigation equipment may include pumps, motors, delivery equipment, sprays, system controllers
- Irrigation system servicing may include cleaning and unblocking sprinkler heads, flushing system, checking system function.

Evidence Guide*Critical underpinning knowledge*

- Methods and techniques of irrigation
- Occupational health and safety guidelines
- Components of an irrigation system
- Characteristics and operation of joints, valves and sprinkler components
- Operation of pumps and water flow rates
- Behaviour of water on varying terrain and soil types
- Soil water retention testing techniques
- Basic principles and practice in drainage design
- Water quality and water filtration techniques
- Computerised irrigation systems.

Critical underpinning skills

- Undertake irrigation system maintenance.

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the national module HOR214 *Irrigation system operation and maintenance* or equivalent
- Completion of the Learning Guide for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include:

- Relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills have been integrated and applied in a workplace setting or other specified setting.

Occupational health and safety issues

Occupational health and safety issues associated with this unit include: working with hand tools, safe lifting and manual handling techniques and working with due regard to the safety of others.

Environmental issues

Environmental issues for workers at this level include: disposal of waste material.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit describes the installation of drainage systems to a forest.

Drainage installation is likely to be under limited supervision from others with checking only related to overall progress. The work at this level involves the application of forestry knowledge with depth in some areas and a broad range of forestry skills. Installation is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

1 Prepare a site in accordance with plans and specifications

- 1) Measurement and marking out of drainage lines is consistent with plan.
- 2) Trenches where constructed are at the specified depth without damage to services, facilities, features and established plants.
- 3) Equipment operation and work practices conform with organisation occupational health and safety guidelines.
- 4) Regulations and legislation relevant to the situation are observed.
- 5) Work practices reflect sustainable forestry principles and respond to local community requirements.

2 Install drainage components

- 1) Plan is interpreted and where applicable, contractors are supervised and work is monitored to conform to plan.
- 2) Components are assembled and connected in accordance with plan, joints are completed and tested in accordance with manufacturer's specifications.
- 3) Fittings and valves are fitted and adjusted to requirements of the installation plan, and all joints are secured in accordance with organisation guidelines.
- 4) Earthworks are finished off to specification.
- 5) The system configuration and capacity matches the installation plan.
- 6) Tools are chosen appropriate to the task being undertaken, used in accordance with guidelines and safe working practices are employed.

Range of Variables

- Drainage systems may include surface drains, culverts, mole drains
- Equipment may include pumps, motors.

Evidence Guide*Critical underpinning knowledge*

- Operation of pumps and water flow rates
- Behaviour of water on varying terrain and soil types
- Soil water retention testing techniques
- Principles and practice in drainage design.

Critical underpinning skills

- Prepare a site in accordance with plans and specifications
- Install drainage components.

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the relevant national module or equivalent
- Completion of the Learning Guide(s) for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include

- Relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills have been integrated and applied in a workplace setting or other specified setting.

Occupational health and safety issues

Occupational health and safety issues associated with this unit include working with hand tools and machinery, safe lifting and manual handling techniques and working with due regard to the safety of others.

Environmental issues

Attention should be paid to minimising the impact to surrounding areas of machinery, people, materials and hazardous substances (such as fuels and chemicals) that may be used in drainage installation activities. Disposal of debris and repair of soil disturbance from such activities should respect local environmental practices and concerns.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit of competency is concerned with the installation of irrigation systems.

Irrigation installation is likely to be under limited supervision from others with checking only related to overall progress. The work at this level involves the application of forestry knowledge with depth in some areas and a broad range of forestry skills. Irrigation installation is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

1 Prepare a site in accordance with plans and specifications

- 1) Measurement and marking out of irrigation lines is consistent with plan.
- 2) Trenches where constructed are at the specified depth without damage to services, facilities, features and established plants.
- 3) Equipment operation and work practices conform with organisation occupational health and safety guidelines.
- 4) Regulations and legislation relevant to the situation are observed.
- 5) Work practices reflect sustainable forestry principles and respond to local community requirements.

2 Install irrigation components

- 1) Plan is interpreted and where applicable, contractors are supervised and work is monitored to conform to plan.
- 2) Components are assembled and connected in accordance with plan, joints are completed and tested in accordance with manufacturer's specifications.
- 3) Fittings and valves are fitted and adjusted to requirements of the installation plan, and all joints are secured in accordance with organisation guidelines.
- 4) Earthworks are finished off to specification.
- 5) The system configuration and capacity matches the installation plan.
- 6) Tools are chosen appropriate to the task being undertaken, used in accordance with guidelines and safe working practices are employed.

Range of Variables

- Irrigation systems may include mains pressure, low pressure, below ground, above ground, spray systems, dripper systems
- Irrigation equipment may include pumps, motors, delivery equipment, sprays, system controllers.

Evidence Guide*Critical underpinning knowledge*

- Methods and techniques of irrigation
- Components of an irrigation system
- Characteristics and operation of joints, valves and sprinkler components
- Operation of pumps and water flow rates
- Behaviour of water on varying terrain and soil types
- Soil water retention testing techniques
- Principle and practice in irrigation design
- Water quality and water filtration techniques.

Critical underpinning skills

- Prepare a site in accordance with plans and specifications
- Install irrigation components.

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the national module HOR316 or equivalent
- Completion of the Learning Guide(s) for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include

- Relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills have been integrated and applied in a workplace setting or other specified setting.

Occupational health and safety issues

Occupational health and safety issues associated with this unit include working with hand tools and machinery, safe lifting and manual handling techniques and working with due regard to the safety of others.

Environmental issues

Attention should be paid to minimising the impact to surrounding areas of machinery, people, materials and hazardous substances (such as fuels and chemicals) that may be used in irrigation installation. Disposal of debris and repair of soil disturbance from such activities should respect local environmental practices and concerns.

Description

This unit of competency is concerned with the operation of irrigation systems.

Work is likely to be under limited supervision with checking related to overall progress. Responsibility for the work of others may be involved and team co-ordination may be required. Competency involves the application of knowledge with depth in some areas and a broad range of skills. Competencies are normally used within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

This unit is based on the following rural generic units:

RUG109 Operate basic elements of an irrigation system

RUG112 Operate irrigation system

RUG115 Operate and co-ordinate irrigation system processes

1 Perform pre-start checks

- 1) Checks of water, power, fuel and lubricants ensure that all are available and the control system is operational.
- 2) Pump is primed if necessary and valves, gates and controls are open or closed as directed.
- 3) Water management devices are in position according to design specifications.
- 4) Pressure and flow testing equipment is calibrated and available.

2 Prepare injection or fertigation equipment

- 1) Injection or fertigation equipment is connected as directed and calibrated according to manufacturers specifications.
- 2) Fertiliser concentration is calculated and the solution thoroughly mixed according to enterprise standards.
- 3) Injection equipment is flushed out until equipment is clean or for approximately ten minutes prior to shut down.

3 Start up and inspect system

- 1) Start up sequence is implemented in accordance with operations manual and water levels and pressure built up slowly as directed.
- 2) All malfunctions, leakages and blockages are corrected or repaired immediately and reported to the supervisor.
- 3) Control system is set to ensure time of application for amount of water required is in accordance with irrigation schedule.
- 4) Pressure at the headworks and control valves is within design specifications indicating efficient filter operation and water is distributed evenly to the targeted areas with minimal wastage and run-off.

4 Shut down system based upon irrigation indicators

- 1) Area is irrigated to the required soil moisture levels and time lag between shut down and end of watering is determined to minimise run-off and deep percolation.
- 2) System components are shut down and drained in sequence according the operations manual and irrigation activity is recorded as required according to enterprise guidelines.

Range of Variables

- Irrigation systems may include mains pressure, low pressure, below ground, above ground, spray systems, dripper systems, capillary, ebb and flow and flood systems
- Water sources may include underground water supply, mains or surface storage
- Irrigation equipment may include pumps, motors, tensiometers, probe tubes, solenoid valves, sprinklers, delivery equipment, sprays, system controllers, disinfestation equipment and filters or other water treatment equipment
- Testing equipment may include pressure gauges, flow meters
- Injection/fertigation equipment may include pumps, tanks, strainers and injectors
- Irrigation systems may range from manual operation and monitoring to fully automated with computer control and monitoring
- Maintenance may include efficiency testing, run off awareness, filter maintenance, legislative requirements
- Checks may include flow rates, operating pressures, tail waters
- Inspections may include solenoid adjustments, priming all laterals to prevent water hammer, sprinkler pressure and output, head ditch, tail water, reuse system, flow rate
- Fertigation may involve leaf, water and soil analyses
- Treatment systems for both head and tail water
- Re-use systems including disinfestation and filtering equipment.

Evidence Guide

Critical underpinning knowledge and skills

A basic working knowledge of:

- methods and techniques of irrigation
- components of an irrigation system
- characteristics and operation of joints, valves and sprinkler components
- operation of pumps and water flow rates.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit of competency is concerned with the basic operational maintenance and servicing work undertaken by machinery operators.

Operational maintenance is likely to be under limited supervision from others with checking only related to overall progress. Basic operational maintenance is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

1 Perform scheduled maintenance

- 1) Basic operational maintenance is performed on the equipment in accordance with manufacturer's guidelines and organisation guidelines.
- 2) Equipment is adjusted, cleaned and stored consistent with manufacturer's specifications and organisation policy.

2 Rectify common mechanical faults

- 1) Faults are diagnosed from mechanical symptoms and repaired where they do not require specialist attention in accordance with manufacturer's guidelines, organisation policy and supervisor's instructions.
- 2) Tools selected are appropriate to each task and safe work practices are employed in accordance with organisation policy.

Range of Variables

- Equipment may include motorised equipment, plant, implements
- Tools may include hand tools, power tools, safety equipment, chainsaw
- Implements to be calibrated may include sprayers, seeders, mowers, back hoes, rotary hoes
- Motorised machinery may include sprayers, tractors, lawn mowers, rotary hoes, chainsaws,
- Vehicles may include cars, trucks, tractors, motor cycles, ATVs
- Plant may include pumps, generators, coolers
- Engine types may include petrol, diesel, 2-stroke, 4-stroke
- Scheduled maintenance may include daily, weekly, monthly, quarterly and yearly servicing schedules, servicing schedules based upon hourly usage rates
- Mechanical faults may include basic faults reasonably within the scope of a non-mechanic: damage, wear, malfunction or unsoundness.

Evidence Guide

Critical underpinning knowledge:

- The working principles of 2-stroke and 4-stroke petrol and diesel engines
- Major set-up requirements of vehicles and equipment and principles of calibration
- Servicing characteristics of vehicles and equipment
- Fault finding techniques in mechanical devices.

Critical underpinning knowledge:

- Perform scheduled maintenance
- Calibrate equipment
- Rectify common mechanical faults.

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the national module HOR353 Machinery and Equipment Maintenance or equivalent.
- Completion of the Learning Guide(s) for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor

Evidence of achievement of the Performance Criteria of this unit of competency can include

- Relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills have been integrated and applied in a workplace setting or other specified setting.

Occupational health and safety issues

Consideration should be given to the health and safety of workers who will be involved in maintenance activities in relation to machinery and equipment operation and manual lifting techniques. Workshops used for maintenance work should conform to organisation occupational health and safety requirements.

Environmental issues

Attention should be paid to minimising the impact to surrounding areas of machinery, materials and hazardous substances (such as fuels and chemicals) that may be used in machinery maintenance. Disposal of debris and chemicals from such activities should respect local environmental practices and concerns.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit of competency is concerned with the preparation of growing media.

Preparation of growing media is likely to be under limited supervision from others with checking only related to overall progress. Preparation of growing media is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

1 Undertake a soil test

- 1) Samples collected are representative of the area being tested as specified for the test being undertaken and according to organisation specifications.
- 2) On-site testing procedures are performed according to manufacturer's guidelines and industry practice.
- 3) Off-site testing samples are packaged, documented and dispatched according to organisation specifications and tester's requirements.
- 4) Records are maintained in accordance with organisation guidelines.

2 Contribute to the development of a nutrition plan

- 1) Evidence gathered relates to nutritional requirements of the specified species.
- 2) Conclusions drawn from relevant information and recommendations are based on reasoned argument and appropriate evidence.

3 Implement the soil preparation program

- 1) Advanced implements are connected to tractors, checked and driven safely in accordance with organisation policy.
- 2) Work patterns are developed to ensure full coverage, minimum overlap and optimum efficiency.
- 3) Soil additives are applied evenly, over whole area and in volume specified in media preparation program.
- 4) Beds are prepared in accordance with species requirements and supervisor's specifications.
- 5) Work of others is supervised to ensure conformity to plan.
- 6) Program is monitored and remedial action undertaken where necessary.

4 Implement soil disinfestation procedures

- 1) Equipment is prepared and used in accordance with supervisor's instructions and manufacturer's guidelines.
- 2) Treatments are prepared according to soil preparation plan and integrated pest management strategy.
- 3) Covers, protective devices and quarantine measures are established according to manufacturer's specifications and organisation guidelines.
- 4) Disinfestation process is undertaken according to manufacturer's specification, industry practice and organisation guidelines.
- 5) Procedures are monitored and remedial action undertaken where necessary.
- 6) Equipment operation and work practices conform with organisation occupational health and safety guidelines.

5 Assess suitability of soil for planting

- 1) Soil assessed for moisture, tilth, compactness, depth and decaying plant material, relative to soil preparation program.
- 2) Conclusions drawn from relevant information are based on reasoned argument and appropriate evidence and relate to the requirements of the species.

Range of Variables

- Media may include soil, water (hydroponics)
- On-site soil tests undertaken may include those for pH, N, salts
- Nutritional factors may include observations of species/plant behaviour, information from soil tests
- Soil preparation techniques may include ploughing, harrowing, ripping, rotary hoeing
- Advanced implements may include PTO implements, three-point linkage equipment
- Soil disinfestation processes may include fumigation, pasteurisation, sterilisation.

Evidence Guide

Critical underpinning knowledge

- The working principles of 2-stroke and 4-stroke petrol and diesel engines
- Major set-up requirements of vehicles and equipment and principles of calibration
- Servicing characteristics of vehicles and equipment
- Fault finding techniques in mechanical devices.

Critical underpinning skills:

- Undertake a soil test
- Contribute to the development of a nutrition plan
- Implement the soil preparation program
- Implement soil disinfestation procedures
- Assess suitability of soil for planting.

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the national module HOR311 *Field and Growing Media Preparation* or equivalent
- Completion of the Learning Guide(s) for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include

- Relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills have been integrated and applied in a workplace setting or other specified setting.

Occupational health and safety issues

Occupational health and safety issues associated with this unit include working with hand tools and machinery, forestry chemicals and fertilisers, safe lifting and manual handling techniques and working with due regard to the safety of others.

Environmental issues

Attention should be paid to minimising the impact to surrounding areas of machinery, people, materials and hazardous substances (such as fuels and chemicals) that may be used in preparation of growing media. Disposal of debris from such activities should respect local environmental practices and concerns.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit is concerned with propagation of plants by sexual and asexual methods.

1 Collect propagation material

- 1) Parent plant is prepared and collection method employed suitable to species and in accordance with organisation guidelines.
- 2) Maximum viability of propagated material is maintained by conditioning and storage in accordance with the requirements of the species.
- 3) Tools are chosen appropriate to the task being undertaken, used in accordance with organisation guidelines and safe working practices are employed.

2 Prepare growing media

- 1) Components are prepared in accordance with manufacturers directions, organisation guidelines, propagation method and plant needs.
- 2) Storage procedures are performed and hygiene practices followed in accordance with organisation guidelines.

3 Prepare growing site

- 1) Benches are free from contamination and hygiene practices are followed in accordance with organisation guidelines.
- 2) Growing environment is prepared to suit species and propagation method, weed retardants are prepared and applied as specified in planting program.
- 3) Tools are chosen appropriate to the task being undertaken, used in accordance with guidelines and safe working practices are employed.

4 Implement propagation method

- 1) Pre-planting treatment is applied and/or carried out appropriate to the propagation method and species, in accordance with organisation policy.
- 2) Placement and depth are in accordance with planting method and species.
- 3) Plants are handled in a way that prevents damage.
- 4) Water and nutrients are applied to suit the media conditions, plant requirements and propagation techniques employed, and in accordance with manufacturer's instructions.
- 5) Labels and identification are correct and applied in accordance with organisation guidelines.
- 6) Remedial action is taken as specified in planting program, to control pests and diseases.
- 7) Records are completed accurately and at the required time in accordance with organisation guidelines.
- 8) Tools are chosen appropriate to the task being undertaken, used in accordance with guidelines and safe working practices are employed.

Range of Variables

- Propagation material may include: seeds, cuttings, spores, grafted plants, buds, separations/divisions, tissue cultures, rhizomes, plantlets, pollen (pollinating).
- Growing media may include: sand, potting mix, gravel, gro-wool, sawdust, pine bark, water (hydroponics), scoria, agar
- Growing environment may include: heat, light, humidity, wind, sun, moisture, topography, rainfall
- Nutrients may include: chemicals, fertilisers, organic material
- Remedial action may include: removal of infected material, treatment with chemicals
- Weed retardants may include: weed-mat, slatted benches, chemical solutions
- Automated sowing equipment may be used
- Seed viability rate may have implications on equipment setup.

Evidence Guide

Critical underpinning knowledge

- media mixing and storage procedures
- growing environments and weed retardants that are suited to propagated material
- pre-planting treatments, water and nutrients suited to propagated material
- remedial action for weeds, pests and diseases
- all forms and techniques of propagation.

Critical underpinning skills:

- collect propagation material
- prepare growing media
- prepare growing site
- implement propagation method
- read and interpret information gained from tables/charts
- complete forms which require accurate technical information.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit of competency is concerned with receiving and dispatching plants and other products.

This type of work is likely to be under limited supervision from others with checking only related to overall progress. Receiving and dispatching at this level involves the application of forestry knowledge with depth in some areas and a broad range of forestry skills. Receiving and dispatching is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

1 Receive and dispatch plants

- 1) Prepare plants for dispatch.
- 2) Orders selected from stock batches according to order forms and collated in the dispatch area in accordance with organisation guidelines and sales plan.
- 3) Stock presentation finalised and accurately labelled in accordance with organisation marketing guidelines.
- 4) All orders thoroughly checked for correctness and prioritised in accordance with organisation guidelines.

2 Receive and dispatch plants

- 1) Incoming stock received and stored according to organisation guidelines and sound forestry practice.
- 2) Dispatch areas and packing goods are maintained and tidied.
- 3) Shelving on trucks organised.
- 4) Contracted arrangements met in accordance with organisation marketing and occupational health and safety guidelines.

Range of Variables

- Incoming stock may include tubestock, propagation units, stock from quarantine, treatments, tools and equipment, seedlings, containerised and bare-rooted plants, seeds, tissue culture vials
- Packing goods may include pallets, plastic wrapping, boxes, trays.

Evidence Guide*Critical underpinning knowledge*

- Plant presentation principles and techniques
- Dispatch and storage procedures
- Planning and organising
- Record keeping.

Critical underpinning skills:

- Prepare plants for dispatch
- Receive and dispatch plants.

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the national module HOR337 *Product Handling* or equivalent
- Completion of the Learning Guide(s) for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include

- Relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills have been integrated and applied in a workplace setting or other specified setting.

Occupational health and safety issues

Care should be taken in lifting and handling of large and heavy objects.

Environmental issues

Not applicable.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit of competency is concerned with the planning the revegetation of disturbed, degraded or remnant natural sites involving analysis of the site, plant selection and the preparation of maintenance plans. This unit is applicable to a site that incorporates indigenous and non-indigenous species.

Planning of revegetation works is likely to be undertaken without supervision with only general guidance on progress sought by higher officers.

1 Analyse area

- 1) Site is analysed for physical, historical, ecological and legal attributes.
- 2) Research is conducted into local plant species, and local by-laws and restrictions.
- 3) Site is analysed for biophysical factors, plant species, ecological and environmental aspects, and site modifications.
- 4) Analysis results are recorded in accordance with organisation guidelines.

2 Prepare a planting plan

- 1) Plan lists plants appropriate to the site and as required by the project brief.
- 2) Native and local fauna are provided for in the plant selection.
- 3) Plan allows for staged implementation and development, where appropriate, in accordance with organisation guidelines and site requirements.
- 4) The plant selection is ratified by the client and/or relevant local community groups.

3 Outline revegetation treatments

- 1) Revegetation treatments are selected to reflect characteristics and availability of plant materials.
- 2) Revegetation treatments are selected to suit machinery, labour and material availability as required by project brief.
- 3) Revegetation treatments are selected to accommodate environmental influences affecting success of revegetation works.

4 Prepare a maintenance plan

- 1) Ongoing plant health is provided for in accordance with organisation standards.
- 2) Habitat and fauna corridor requirements are met in accordance with organisation policy.
- 3) Access for future works is provided for where staged development is planned.
- 4) Time-lines, schedules and required resources are clearly stated.
- 5) Plan is communicated clearly to those who will undertake the ongoing management of the area and is documented in accordance with organisation guidelines.
- 6) The maintenance plan is ratified by the client and/or relevant community group.
- 7) Recommendations are made in respect to maintenance of vegetation in accordance with organisation guidelines.

Range of Variables

- Available sources for research may include libraries, oral history, biological remains, local archives, educational institutions
- Causes of disturbance may include clearance, wildfire, erosion, drainage, animal grazing and damage
- Environmental factors may include rainfall, sunlight, humidity, wind
- Indigenous plant issues may include pre-existing native flora, environmental weeds
- Local restrictions may include prohibited plant species, restricted plant species, by-laws
- Provisions for native and local fauna may include adequate leaf litter, leaving fallen logs or standing trunks for nest sites, leaving animal “highways” undisturbed, encouraging certain insect populations, encouragement of fauna corridors, understanding of fauna habitat requirements and planning for ongoing maintenance of habitat
- Provisions for plant health may include water, nutrition, weeds, pests and diseases control, guarding against damage by local fauna
- Staged implementation may include gradual replacement of habitat, planting during different times, provision of access for future works
- Revegetation treatments may include planting of containerised plants, planting of bare rooted plants, direct seeding, natural regeneration, planting of divisions, transplanting mature plants, fencing of stock and pest animals, chemical control of weeds, cultural control of weeds, biological control of weeds, retention of site debris, preparation of soil surface to suit regeneration
- Topographical attributes may include slope, over-storey, natural/artificial watercourses, outcrops, gross modifications.

Evidence Guide*Critical underpinning knowledge*

- Principles of ecology
- Identification and propagation techniques of native plant species
- Chemical, cultural and biological weed control techniques
- Control of pest animal species
- Forward planning and scheduling of works
- The advantages and disadvantages of a range of revegetation treatments
- Revegetation issues
- Soil conservation techniques
- Wildlife habitat principles
- Maintenance practices associated with revegetated sites.

Critical underpinning skills

- Survey and analyse the biophysical characteristics of a site
- Plan revegetation works integrating a range of treatments
- Select plants relevant to an area
- Prepare a maintenance plan.

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the national modules HOR406 *Bushland Restoration*, HOR414 *Plant Materials* and/or HOR421 *Revegetation Planning* or equivalent
- Completion of the Learning Guide(s) for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include

- Relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills have been integrated and applied in a workplace setting or other specified setting.

Occupational health and safety issues

Consideration should be given at the planning stage to the health and safety of workers who will be involved in implementing revegetation and maintenance works requiring application of hazardous chemicals and/or treatments.

Environmental issues

Attention should be paid at the planning stage to minimise the impact to the site of machinery, people, materials and hazardous substances such as fuels and chemicals that may be used in revegetation works.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit of competency is concerned with the implementation of an integrated forest pest management program.

The implementation of an integrated pest management program is likely to be undertaken without supervision with only general guidance on progress sought by others. Responsibility for and limited organisation of the work of others involved in an integrated pest management program may be involved.

Implementing an integrated pest management program at this level requires a broad range of skills and involves the application of underpinning knowledge with depth in some areas such as weed, pest and disease recognition and control, life cycles of predator and host, and forest health requirements.

1 Assess weed, pest and disease infestations

- 1) Symptoms of weed, pest and disease infestation are identified.
- 2) Weed, pest and disease relationships and vectors are defined.
- 3) Size and scope of infestation are assessed.
- 4) Business implications and urgency of action required are assessed in accordance with published data and organisation policy.
- 5) Conditions likely to impact business viability are reported to appropriate colleagues.

2 Implement weed, pest and disease control measures

- 1) Control procedures reflect sound implementation of Integrated Pest Management strategy, marketing objectives and business imperatives.
- 2) Prevention program is monitored and remedial action undertaken where necessary.
- 3) Control procedures are monitored and remedial action taken where necessary.

3 Plan appropriate integrated treatments for weeds, pests and diseases

- 1) Treatments selected include chemical and/or non-chemical.
- 2) Integrated application of treatments is clearly outlined.
- 3) Treatments are chosen which provide a suitable response to infestations having regard to cost of damage, cost of infestation, marketing requirements, withholding periods and sustainable forestry practices.

Range of Variables

- Control procedures may include chemical, non-chemical, biological
- Weeds may include those occurring regionally, in the state, nationally which may present a high risk and that occur in regions of similar climatic and geographic conditions
- Pests and diseases may include infestations occurring regionally, occurring statewide, not occurring but identified as high risk potential problems for the industry.

Evidence Guide

Critical underpinning knowledge

- Weeds and pests of specific forest growing organisations
- The integration of weed, pest and disease control measures
- Sustainable forestry practices
- Cost/benefit analysis relevant to selection of weed, pest and disease control measure
- Application techniques for chemical and non-chemical treatments
- Ecological impacts of different control treatments.

Critical underpinning skills

- Assess weed, pest and disease infestations
- Implement weed, pest and disease control measures
- Plan appropriate integrated treatments for weeds, pests and diseases.

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the national module HOR429 *Integrated Pest Management* or equivalent
- Completion of the Learning Guide(s) for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include

- Relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills have been integrated and applied in a workplace setting or other specified setting.

Occupational health and safety issues

Consideration should be given to the health and safety of workers who will be involved in activities associated with integrated pest management particular in relation to chemical use, and equipment and machinery operation.

Environmental issues

Integrated pest management programs should reflect sustainable forestry practices.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit of competency is concerned with the supervision of forestry plant production.

The production of plants is likely to be undertaken without supervision with only general guidance on progress sought by others. Responsibility for and limited organisation of the work of others involved in the production of plants.

The work at this level requires a broad range of skills and involves the application of underpinning knowledge with depth in some areas such as supervision, quality assessment, production scheduling and plant requirements such as growing media, fertiliser and water requirements.

1 Supervise growing-on of plants

- 1) Growing media is selected in accordance with organisation guidelines and plant needs.
- 2) Environmental parameters are selected and altered to meet plant needs, the organisation and the production/sales plan.
- 3) Planting depth and application of water are in accordance with sound forestry practice and production/sales plan.
- 4) All growing-on and treatment processes and hygiene practices are carried out according to production/sales plan and organisation policy.
- 5) Staff are given clear directions concerning growing-on processes and treatments in accordance with organisation policy.

2 Oversee and monitor plant maintenance

- 1) Growing plants are monitored for quality in accordance with published data and historical records.
- 2) Treatment is modified as required for optimum growth in accordance with organisation guidelines.
- 3) Growing plants are located to ensure that light and spacing requirements are in accordance with plant needs and organisation guidelines.

3 Prepare plants for dispatch

- 1) Plants are prepared for dispatch in line with plant development and production/sales plan.
- 2) Poor quality plants are dealt with according to organisation policy.
- 3) Plants are appropriately packed with accurate labels for dispatch in the quantity determined by the production/sales plan.

Range of Variables

- Dispatch refers to the preparation and delivery of plants to retailers or consumers
- Elements for potting-up planning may include organising for the following: pots are on-site; media is ready; plants are on-site; media is ready; growing-site is ready to receive newly potted plants
- Environmental parameters may include light; temperature; humidity; airflow
- Further treatments while plants are growing may include growth retardants; fertiliser; staking; formative pruning
- Media can include soil; soil-less mixes; water (hydroponics); nutrient agar
- Nursery plants may include seedlings; grafted plants; tissue culture plants; stock plants
- Stage required for sale may include healthy foliage; size determined by the marketing plan; coming into bud; pots unbroken.

Evidence Guide

Critical underpinning knowledge

- Optimal growing requirements of forest nursery plants
- Staff supervision
- Quality standards of production
- Packing, dispatch and handling techniques of specific plants.

Critical underpinning skills

- Supervise growing-on of plants
- Oversee and monitor plant maintenance
- Prepare plants for dispatch.

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the national module HOR506 *Controlled Environment Management*, HOR438 *Quality Procedures*, HOR436 *Advanced Nutrition* and/or equivalent
- Completion of the Learning Guide(s) for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include

- Relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills have been integrated and applied in a workplace setting or other specified setting.

Occupational health and safety issues

Consideration should be given to the health and safety of workers who will be involved in activities associated controlled environments particularly in relation to chemical use. Care should be taken to avoid conditions that suit bacterial diseases such as *Legionella*.

Environmental issues

Production of forest nursery plants should reflect sustainable forestry practices especially in relation to water run-off and disposal of chemicals and organic debris.

Description

This unit of competency is concerned with the management of irrigation, drainage and treatment systems for horticultural enterprises.

The management of these systems is likely to be undertaken without supervision with only general guidance on progress sought by others. Responsibility for, and limited organisation of, the work of others involved in an irrigation management program may be involved.

Management of irrigation, drainage and treatment systems requires a broad range of Level 3 skills and involves the application of underpinning knowledge with depth in some areas such as soils and plant nutrition and water requirements.

This unit is based on the following rural generic units:

RUG117 Oversee system modifications and installation activities

RUG118 Oversee irrigation system operation

RUG119 Oversee maintenance program

RUG120 Implement irrigation system monitoring program

1 Oversee system construction, installation and modifications

- 1) Contractors and suppliers are briefed according to the system design plans, specifications and enterprise standards.
- 2) Materials, components and equipment are ordered and are on hand prior to commencement of works.
- 3) Workers are allocated tasks according to their experience and skills.
- 4) The works are implemented according to the design plan, specifications and enterprise standards.
- 5) The system is flushed and tested and all seepage, leaks, batter stability, pressure readings, flow rates and corrective actions are taken.
- 6) Appropriate notations are made where the installation differs from that shown on the plan.
- 7) Safety precautions are implemented and personal protective equipment issued where appropriate.

2 Oversee system operation

- 1) Water budgets are determined having regard to the evapo-transpiration state of the crop/plants, soil moisture characteristics and cultural practices.
- 2) System started, operated and shut down efficiently in accordance with the system operation manuals.
- 3) Frequency and duration of system operation is programmed in accordance with irrigation schedules and cultural requirements.
- 4) Fertigation application via the system is implemented according to crop/plant requirements and enterprise standards.
- 5) Drainage water volumes determined, and data collected and measured on irrigation intensity, frequency, volumes, water table, run-off quality, relevant regulations and water analysis according to enterprise standards.
- 6) Drainage needs are identified having regard to the calculation of quantities, the impact of water quality on plants, the pre-treatment of drainage water prior to reuse or disposal and the requirements of disinfection systems.
- 7) Enterprise standards and specific responsibilities of operational elements are defined in the system program which is clearly communicated to all staff.
- 8) Irrigation program meets the management constraints of the business and the site according to the requirements of specific crops.

3 Oversee system maintenance

- 1) Routine oversight ensures that equipment, tools and skilled staff are on site and maintenance activities are carried out according to the maintenance program and the manufacturers specifications.
- 2) System structures, fittings, pipes and channels are maintained free of leaks, damage, silt and other blockages to ensure flow and distribution of water to targeted areas.
- 3) Regular monitoring ensures that gradients and levels of system structures, fittings, pipes and channels do not disrupt water flow and distribution according to design specifications.

4 Oversee system monitoring

- 1) System pressures and water flow rates are measured and recorded according to enterprise guidelines.
- 2) Variations in pressure, water flow and distribution are identified and recorded according to enterprise guidelines.
- 3) Malfunctions and factors external to the system which may cause interference in the system are identified, fixed and actions recorded in system maintenance log book.
- 4) Spare parts in store meet demand and purchases.
- 5) Details of purchases are recorded in system maintenance log according to enterprise guidelines.
- 6) Frequency and water usage is measured and recorded according to enterprise guidelines.
- 7) Differences between estimated water use and actual water used are calculated and recorded to ensure that water allocation does not exceed the water schedule.
- 8) Water quality including salinity, pH level and nutrient concentration is measured and recorded according to enterprise guidelines.
- 9) Growth and water use efficiency is assessed and recorded according to enterprise guidelines.
- 10) Soil moisture and soil chemical characteristics are measured and recorded according to enterprise guidelines.
- 11) Climate and weather conditions are recorded according to enterprise guidelines.
- 12) All appropriate recording and documentation systems are completed and periodically analysed to enable changes to be made to the operations manual, maintenance scheduling program, irrigation schedule, systematic testing procedures manual, and the design plans and specifications – enlisting expert assistance if required.

Range of Variables

- Appropriate personnel may include irrigation consultants, specialist contractors, tradespersons, labourers
- Test procedures may include pressure and flow rate calculations, leaf analysis, soil analysis, catch can tests, water analysis
- Irrigation systems may range from manual operation and monitoring to fully automated with computer control and monitoring
- Soil moisture may be measured by subjective means, tensiometers, enviroscan, gypsum disks, neutron probes, tail water storage
- Operations manual and maintenance program specifies all activities, calendar/schedule and the standards of performance for each activity
- Monitoring program includes procedures for recording pressure, distribution uniformity, flow variations, leaks etc, outside interference, system inefficiencies, water table level, pump run hours, replacement components used, hazardous substances and chemicals used etc
- Crop requirements may include allowance for wind conditions, disease susceptibility, shipping times, customer or employee presence, off-peak pumping times, limited water availability, soil and moisture monitoring and recording
- Drainage systems may include surface, sub-surface, mole, pipe and rubble drains, culverts, sumps, debris baffles, sedimentation pits, sand beds and/or filters, reed beds, dams, tanks, pumps and a range of disinfection equipment.

Evidence Guide*Underpinning knowledge and skills*

A basic working knowledge of:

- interpreting plans and specifications
- general irrigation, drainage and treatment systems
- flow rates and pressure differentials
- systematic testing procedures
- irrigation usage calculations
- interpretations and report structures
- earth moving techniques and machinery capabilities
- supervising, negotiating and estimating and costing of resources
- crop/plant water requirements
- impact of maintenance program on running costs
- pump performance.

An ability to oversee:

- system construction, installation and modifications
- system operations
- system maintenance
- system monitoring .

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit of competency is concerned with the planning process for the preparation of a growing medium.

Planning is likely to be undertaken alone or under broad guidance. Responsibility for the planning and management of the work of others may be involved. Planning the preparation of a growing medium at this level involves the self-directed application of knowledge with substantial depth in some areas.

1 Research the media requirements of a species

- 1) Research defines media requirements, applications of each, specific to the needs of the species as it relates to marketing, production and business plans.
- 2) Cost benefit analysis of each media is developed, business implications are determined relative to marketing, business and production plans.

2 Determine the requirements for a soil analysis

- 1) Nutrition requirements of species are determined and behaviour in a range of soil conditions is identified.
- 2) Program is developed which defines scope of soil analysis and test schedule.
- 3) Performance of on-site soil testing procedures is supervised.

3 Interpret the results of comprehensive media analysis

- 1) Results are analysed against requirements of the species, historical data and organisation policy.
- 2) Conclusions drawn from relevant information are based on reasoned argument and appropriate evidence.
- 3) Recommendations are developed on soil treatment and preparation, requirements are documented and communicated effectively.

4 Interpret the results of plant tissue analysis

- 1) Results are analysed against published characteristics of healthy plant tissue and historical data.
- 2) Conclusions are drawn from published data, expert advice and historical data are based on reasoned argument and appropriate evidence.
- 3) Recommendations developed on nutrition requirements and pest and disease control are documented and communicated effectively.

Range of Variables

- Media may include soil, water (hydroponics)
- Complex soil analysis may include test required to determine both simple and trace element constituents.

Evidence Guide

Underpinning knowledge

- Characteristics of all growing media relative to performance, production capacity, application and cost/benefit
- Biological aspects of plant tissue analysis, relevance of analysis data and, remedies, treatments and procedures relevant to production and quality requirements
- Sources of ground water, characteristics of availability and application in forestry.

Critical underpinning skills

- Research the media requirements of a species
- Determine the requirements for a soil analysis
- Interpret the results of comprehensive media analysis
- Interpret the results of plant tissue analysis.

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the national module HOR436 Advanced Nutrition or equivalent
- Completion of the Learning Guide(s) for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include

- Relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills have been integrated and applied in a workplace setting or other specified setting.

Occupational health and safety issues

Not applicable.

Environmental issues

Not applicable.

Description

This unit of competency is concerned with the design of drainage and irrigation systems for horticultural enterprises and facilities.

Work is likely to be under limited supervision with checking related to overall progress. Responsibility for the work of others may be involved and team co-ordination may be required. Competency involves the application of knowledge with depth in some areas and a broad range of skills. Competencies are normally used within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

This unit is based on the following rural generic units:

RUG122 Determine design requirements

RUG123 Design an irrigation system

RUG124 Assess irrigation system design

1 Determine design requirements

- 1) Water is predicted to be available in sufficient quantity and quality for the particular crop or situation at the time it is needed by the enterprise.
- 2) Water transfer, recharge, reuse and harvesting systems are designed to conserve natural resources.
- 3) The process of collecting or storing water does not degrade the water quality for the enterprise or the environment. Calculations and decisions are documented to enterprise requirements and construction specifications define the work required to make suitable water available to the enterprise.
- 4) Environmentally sensitive areas are identified and protected according to local, state and national legislation and land degradation issues are identified.

2 Define pumping and power systems

- 1) Pumps are selected to deliver water efficiently from the water storage when needed, at the flow and pressure required to operate the distribution system to the design specifications.
- 2) The pump motor combinations are efficient, the pumps are reliable, functional, serviceable and flexible for the intended application.
- 3) Energy requirements are determined and layout of electricity lines are determined and checked with local authority.
- 4) The relationship between capital and operational costs are optimised including a comparison of energy sources.
- 5) Structures, valves, accessories and performance indicators are selected and integrated into a functional system that can be monitored and maintained according to enterprise guidelines.
- 6) Design calculations and decisions are documented according to enterprise guidelines.
- 7) Construction specifications define work required to make suitable pumping and power system available to enterprise.
- 8) Power supply design specification is checked with power authorities.

3 Design a distribution system

- 1) Detailed topographic survey is conducted or an accurate map is obtained showing extent, planting layout, physical constraints and contours with suitable interval.
- 2) Detailed soil survey is conducted at suitable intervals and mapped to show variation in readily available water.
- 3) Water budgets are determined having regard to the evapo-transpiration state of the crop/plants, soil moisture characteristics and cultural practices.
- 4) Distribution systems are evaluated and designed with respect to a range of key variables.
- 5) Pipes, valves and fittings are sized according to design system specifications so that capital cost is balanced against operation costs over the anticipated system life.
- 6) Flows, water levels and pressures are calculated and documented to be within the acceptable tolerances for optimum performance.
- 7) Flows, water levels and pressures are achievable by the pumps and with optimum efficiency according to enterprise standards.
- 8) Mechanisms for controlling and adjusting pressure are included and isolation valves direct water to areas with different irrigation schedules.
- 9) Channel systems and attendant structures are designed according to industry recommendations and channel flow velocities are calculated according to enterprise standards.
- 10) Soil types have been compared for erodeability and suitable fill has been selected for construction according to enterprise standards.
- 11) Construction plans and specifications define work required to achieve the required standards of uniformity and efficiency of water application according to industry standards.

4 Design a drainage, storage and treatment system

- 1) Regional geology and geography is investigated to predict sustainability of irrigation and storage.
- 2) Site investigations determine depth of clay, depth of ground water, soil and water salinity and structural or chemical impediments and calculations and costings will determine the most cost effective storage system.
- 3) Predictions of leaching fractions and salt movements are documented and soil amelioration and drainage management plans are developed.
- 4) The need for leachate interception and de-watering system is determined and if required construction specification prepared for interception and collection, water treatment, disposal, reuse or recycle.
- 5) Drains and structures are capable of carrying the design water volumes and intensities according to enterprise standards.
- 6) Damage from water logging is minimised according to enterprise standards.
- 7) Hydrological calculations predict volumes and rates of surface run-off according to enterprise standards.

5 Determine capital expense budget

- 1) Design calculations and decisions are documented and relevant information is communicated clearly through plans, specifications and manuals.
- 2) Design output is checked by a competent designer against enterprise objectives.
- 3) Materials requirements are determined and documented from plans and specifications.
- 4) Labour requirements are estimated, based upon documented work schedule with reasonable allowance for variances in work schedules.
- 5) Costing attributed to each component is based upon quoted information from suppliers, or sound analysis of individual elements.

6 Determine operating expense budget

- 1) Operating expense budget indicates all expenses applicable to the completed irrigation system.

Range of Variables

- The design may include: compliance with the standard specification legislation and regulations of the relevant state or territory water and power authorities
- Micro-irrigation systems may include: drip; mains pressure; low pressure; below surface; above surface; emitter trickle; t-tape; and mini-sprinklers; capillary; ebb and flow; flood systems
- Spray irrigation systems may include: travelling irrigators (soft hose, hard hose boom type); centre pivot; linear move; powered side roll hand shift permanent (installed); bike shift/easy shift
- Surface irrigation systems may include: border check; contour irrigation; furrow irrigation; hillside flooding; basin irrigation
- System may range from manual operation and monitoring to fully automated with computer control and monitoring
- Standards of uniformity and efficiency may vary from system to system
- Key variables may include: ability to target like soils and crops; efficiency of water use in various crop/weather situations; wind breaks to support irrigation where appropriate; uniformity of distribution; specialist irrigation consultant
- Documentation may vary according to: budget; environmental constraints; owner preferences and quoting procedures
- Reuse systems may include: disinfection and filtering equipment.

Evidence Guide*Underpinning knowledge and skills*

A basic working knowledge of:

- latest irrigation technology
- contractual developments and obligations
- design processes
- drainage and storage development technology
- latest treatment technology and Environmental Protection Agency regulations
- automatic control and monitoring systems
- budgeting, waste management and environmental issues.

An ability to:

- determine design requirements
- define pumping and power systems
- design a distribution system
- design a drainage, storage and treatment system
- determine capital expense budget
- determine operating expense budget.

Description

This is an industry-endorsed unit of competence from the Production & Recreational horticultural sector of the Rural Industries.

This unit of competency is concerned with the management of plant & forest health.

Work is likely to be under limited supervision with checking related to overall progress. Responsibility for the work of others may be involved & team co-ordination may be required. Competency at this level involves the application of knowledge with depth in some areas & a broad range of skills. Competencies are normally used within routines, methods & procedures where some discretion & judgement is required in the selection of equipment, work organisation, services, actions & achieving outcomes within time constraints.

1 Develop a plant health & management program

- 1) Plant health issues are identified from published data, historical records & industry consultation.
- 2) Management issues are defined relative to desired quality, quantity & productivity requirements of marketing & production plans.
- 3) Program is developed which defines organisation guidelines & specific responsibilities of operational elements to achieve required outcomes.
- 4) Program is communicated effectively & systems are established to monitor business goals.

2 Develop a plant maintenance program

- 1) Plant maintenance requirements are defined having regard to health, production, marketing, seasonal & environmental influences.
- 2) Program defines organisation guidelines & specific responsibilities of operational elements to achieve required outcomes.
- 3) Program is communicated effectively & systems are established to monitor business goals.

3 Undertake a ground water analysis

- 1) Requirements of a ground water test are defined & documented, & performance monitored in accordance with industry practice & organisation guidelines.
- 2) Recommendations are developed on ground water contribution to overall water budget & documented in accordance with organisation guidelines.

4 Develop an irrigation program

- 1) Need for an irrigation program is determined based on forest needs & organisation guidelines.
- 2) Irrigation needs are defined having regard to water budget, seasonal influences, seasonal variation & climatic influences.
- 3) Program defines organisation guidelines & specific responsibilities of operational elements to achieve required outcomes.
- 4) Program is communicated effectively & systems are established to monitor business goals.

5 Develop a plant nutrition program

- 1) Nutrition requirements of plants prior to planting, & at planting, post-planting & growing phase are identified from published data, historical records & industry consultation.
- 2) Remedial treatments to respond to quality variations are defined.
- 3) Program defines the organisation guidelines & specific responsibilities of operational elements to achieve required outcomes.
- 4) Program is communicated effectively & systems are established to monitor business goals.

6 Implement an Integrated Pest Management strategy

- 1) Application procedures of the Integrated Pest Management strategy are identified & operational plans suitably reflect desired outcomes.
- 2) Integrated Pest Management strategy application in the workplace is monitored, & remedial action undertaken where necessary.
- 3) Conditions likely to impact business viability are identified, options documented & recommendations presented to appropriate guidelines.

Range of Variables

- Ground water may include surface water table, sub-terranean water table
- Integrated Pest Management strategy may include application of chemical, biological & environmental strategies for the control of weeds, pests & diseases in fashion which supports sustainable forestry practices
- Plants include species & cultivars that are containerised & open-grown.

Evidence Guide*Critical underpinning knowledge*

- Strategic aspects of managing plant quality, performance & nutrition
- Management of weed, pest & disease infestations
- Planning water budgets & irrigation strategies
- Principle & practice in Integrated Pest Management strategies.

Critical underpinning knowledge

- Develop a plant health & management program
- Develop a plant maintenance program
- Undertake a ground water analysis
- Develop an irrigation program
- Develop a nutrition program
- Implement an Integrated Pest Management strategy.

Evidence of acquisition of underpinning knowledge & skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the national module HOR534 *Plant Health Management* or equivalent
- Completion of the Learning Guide(s) for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references & examples of work and/or
- Demonstration of knowledge & skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include

- Relevant work reports, testimonials, references & examples of work that verify that the underpinning knowledge & skills have been integrated & applied in a workplace setting or other specified setting.

Occupational health & safety issues

Consideration should be given to the health & safety of workers who will be involved in activities associated with maintaining plant health particularly in relation to chemical use, & equipment & machinery operation.

Environmental issues

Plant health management should reflect sustainable forestry practices.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit of competency is concerned with the management of controlled growing environments.

The management of controlled growing environments is likely to be undertaken without supervision. Responsibility for the work of others may be involved.

Management of controlled growing environments at this level requires a broad range of skills and involves the application of underpinning knowledge with depth in some areas such as plant nutrition, plant physiology and growing needs, pest management and forward planning.

1 Determine environmental requirements of plants

- 1) Plant growing requirements are determined.
- 2) Environmental parameters that need to be manipulated to meet requirements of marketing plans are outlined.
- 3) Options available to manipulate the environment are determined.
- 4) Optimal growing environmental conditions are selected to meet growing parameters and market requirements.

2 Develop a production plan for a controlled environment system

- 1) Transition dates to meet market deadlines are determined.
- 2) Growth requirements of plants from planting to harvesting are defined.
- 3) Scope and timing of cultural practices to meet market requirements are outlined.
- 4) Production plan is documented for implementation by staff.

3 Monitor environmental and cultural factors of a controlled environment system

- 1) Environmental and cultural factors to be monitored are determined.
- 2) Format for recording factors is established.
- 3) Frequency of monitoring is determined.
- 4) Threshold for remedial action is defined.
- 5) Required remedial action is documented for implementation by staff.
- 6) Effectiveness of monitoring system is reviewed on a regular basis.

Range of Variables

- Controlled environment systems includes glasshouses, polyhouses, conservatories, tunnels
- Environmental factors include water, air, light, humidity, growing media, temperature
- Cultural factors include fertilising, weed control, light manipulation, watering, staking, tying, pruning, debudding, use of growth hormones and retardants, potting-on
- Remedial action includes watering, pest and disease control, weed control, manipulation of environmental factors
- Plants include containerised, open-rooted grown plants.

Evidence Guide*Critical underpinning knowledge*

- Optimal growing conditions for specific plants
- Manipulation techniques for optimal production
- Market requirements
- Quality production methods
- Production planning
- Plant nutrition and physiology
- Soils and growing media
- Monitoring and recording systems.

Critical underpinning skills

- Determine environmental requirements of plants
- Develop a production plan for a controlled environment system
- Monitor environmental and cultural factors of a controlled environment system.

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the national module HOR506 *Controlled Environment Management* or equivalent
- Completion of the Learning Guide(s) for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include

- Relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills have been integrated and applied in a workplace setting or other specified setting.

Occupational health and safety issues

Consideration should be given to the health and safety of workers who will be involved in activities associated with controlled growing environment systems particular in relation to chemical use, and equipment and machinery operation. Staff should be made aware of possible disease risks that may be associated with humid growing conditions and air conditioning systems.

Environmental issues

Care should be taken in ensuring run-off and debris from controlled growing systems does not enter local water systems. Nutrient discharge can impact on water quality and wildlife habitats.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit of competency is concerned with the implementation of sustainable horticultural practices in the workplace.

Work is likely to be under limited supervision with checking related to overall progress. Responsibility for the work of others may be involved and team co-ordination may be required. Competency at this level involves the application of knowledge with depth in some areas and a broad range of skills. Competencies are normally used within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

1 Prepare and implement strategies

- 1) Financial resources are identified and allocated for environmental management within the organisation.
- 2) Environmental management strategies are developed using available resources and in accordance with management policies and legislative requirements.
- 3) Strategies are assessed for their effectiveness in reducing waste disposal from the organisation in accordance with management policies and sound environmental management practice.
- 4) Changes to environmental management strategies are implemented to ensure ongoing waste reduction, and energy and water efficiency, to take advantage of newly available technologies.

2 Minimise waste

- 1) Materials and consumables obtained by the organisation are from recycled or re-useable materials, where appropriate.
- 2) Materials and consumables are obtained in amounts that result in packaging and waste reduction.
- 3) Composting, shredding, re-using and recycling are used as and when appropriate, in accordance with organisation guidelines.

3 Conserve energy resources

- 1) Machinery is operated and used efficiently, reducing fuel usage and emissions/discharges.
- 2) Energy used for heating, lighting and operation of remote appliances, is efficient and uses alternative sources where appropriate to the use and to management practices.
- 3) Design of buildings and structures takes into consideration the use of passive energy for lighting, heating, and shelter, where possible, and is in line with management policies and the design of the garden.

4 Manage water use

- 1) Water is sourced from locations other than mains water, where possible and where appropriate for its use in accordance with management policies and legislative guidelines.
- 2) Run-off water is managed to optimise its use and minimise pollutants entering the river and drainage systems, where appropriate and sound environmental management practice.
- 3) Retarding basins are planned for where possible and used appropriately in accordance with management policies.
- 4) Planting strategies are developed to efficiently appropriately use available water supply, and take into consideration run-off implications.
- 5) Irrigation/watering strategies are developed to minimise evaporation, run-off and inaccurate delivery of water in accordance with management policies and sound environmental management practice.

5 Undertake an environmental audit

- 1) Audit takes into consideration
 - topography
 - water use
 - current policies and practices
 - waste emissions and materials
 - energy use
 - characteristics of area and
 - legal obligations
- 2) Report is prepared in accordance with industry practice and client/management requirements.

Range of Variables

- Alternate energy sources may include: wind generators; solar generators; solar tubing; water generators; airflow
- Appropriate bodies for consultation may include: statutory bodies; council; consultants; governments
- Characteristics of area may include: climate; heritage; geology; ambience; vegetation
- Elements for inclusion in buildings and structures may include: self-composting toilets; windbreaks; location and construction of windows; building materials; orientation of building or structure; planting surrounding the building or structure; use of colour; cavity sizes
- Waste types may include: paper; plastics; metals; green waste; chemical; glass; construction waste
- Waste water management systems may include: self-composting toilets; septic tanks; sewerage lagoons
- Legal obligations may include: local government; state; federal government; regulations; by-laws; body corporate agreements; title restrictions/encumbrances
- Emissions/discharges may include: noise; light; odour; gas; smoke; vapour; liquids and solids; particulates; fumes
- Run-off may be from: watering; irrigation systems; rain; stormwater; inefficient/defective drains; cooling systems
- Management plan may include provision for the evaluation of environmental assets for insurance purposes.

Evidence Guide*Critical underpinning knowledge:*

- Energy flows and food webs
- Nutrient cycling
- Principles of sustainable agriculture systems
- Principles of composting and waste management
- Internal environmental control standards
- Legislative requirements including occupational health and safety, HAZCHEM, duty of care, dangerous goods
- Soil testing processes and procedures and results interpretation.

Critical underpinning skills:

- Prepare and implement strategies
- Minimise waste
- Conserve energy resources
- Manage water use
- Undertake an environmental audit

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the relevant national module or equivalent
- Completion of the Learning Guide(s) for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include

- Relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills has been integrated and applied in a workplace setting or other specified setting.

Occupational health and safety issues

Consideration should be given to the health and safety of workers who will be involved in activities associated with implementing sustainable forestry strategies particularly in relation to chemical use, waste handling, composting, and equipment and machinery operation.

Environmental issues

Sustainable forestry practices contribute to the environment.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit of competency is concerned with the trialing of plants products and treatments.

Work is likely to be under limited supervision with checking related to overall progress. Responsibility for the work of others may be involved and team co-ordination may be required. Competency at this level involves the application of knowledge with depth in some areas and a broad range of skills. Competencies are normally used within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

1 Establish criteria for trials

- 1) Problem and/or opportunity that supports undertaking a trial is defined in accordance with organisation guidelines and industry practice.
- 2) Criteria are set in accordance with the characteristics of the area and the conditions of the site that will be affected.
- 3) Data gathering requirements are established in accordance with industry practice and organisation guidelines.

2 Establish conditions for trial

- 1) Requirements for turf are defined according to final use, location and hardness.
- 2) Requirements of the site are established in accordance with the nature of the trial.

3 Determine use for trial results

- 1) Trial results are audited and proper conventions and controls are followed to eliminate variables in accordance with sound clinical practice.
- 2) Outcomes are comprehensively analysed based on sound criteria and drawing on all available data from internal and external sources.
- 3) Conclusions are drawn from relevant information, are based on reasoned argument and appropriate evidence.

Range of Variables

- Audit may include: confirming key results; processes; key observations; costing
- Conditions may include: environmental factors; season; geography; topography
- Criteria may include: soil profile; species; environments; growing environment/climate; propagation system; growing system
- Data gathering requirements may include: comprehensive; extensive; accurate; include: audit guidelines
- Decision on whether or not to use the trial outcomes is based on cost effectiveness; how effectively user requirements are met; compatibility; response to identified problem/opportunity
- Nature of the trial – seed; variety; fertiliser; treatments; media
- Physical/mechanical tests may include: wear; compaction/rolling; heat; water; cutting heights
- Problems/opportunities may include: cost efficiency; new products/equipment; environmental problems; tolerance levels; occupational health and safety; new species; creative use of old product
- Problems/opportunities may include: cost efficiency; playing surface; new products/equipment; environmental problems; tolerance levels; occupational health and safety; new species; creative use of old product
- Records may include: costs; relationship between test plots; feasibility; chemical balances
- Trials may include: crops; species; treatments; applications; products.

Evidence Guide

Critical underpinning knowledge:

- General growth habits of plants, products and treatments involved in the trial
- Trialing techniques and procedures
- Business planning for the organisation.

Critical underpinning skills:

- Establish criteria for trials
- Establish conditions for trial
- Determine use for trial results.

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- presentation of a Statement of Attainment from a Registered Training Organisation for the national module HOR601 *Applied Research* or equivalent
- completion of the Learning Guide(s) for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- relevant work reports, testimonials, references and examples of work and/or
- demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include

- relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills has been integrated and applied in a workplace setting or other specified setting.

Occupational health and safety issues

Care should be taken when using chemicals and/or machinery and equipment as part of a trial.

Environmental issues

Trials should be based on sustainable forestry principles.

RUH HRT524 A Provide specialist advice on plants, products and treatments

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit of competency is concerned with the provision of specialist advice to clients and others in respect to specific plants, products and treatments.

Within the forest industry, its application is predominantly in relation to the growing and management of trees on land with multiple uses.

The provision of specialist advice to clients and others is likely to be undertaken alone or under broad guidance involving the self directed application of knowledge with substantial depth in some areas such as plant selection, and a range of technical and other skills such as plant selection and knowledge, forestry products use and availability and application of specific treatments.

Competencies are normally used within routines, methods and procedures where some discretion and judgement is required in the provision of information, services, actions and achieving outcomes within time constraints.

1 Provide specialist advice on plants

- 1) Specialist advice is provided for specific situations and uses.
- 2) Botanical and common names are used to describe plants.
- 3) Growing and performance characteristics are provided with the specialist advice.
- 4) Particular cultural and maintenance requirements are outlined for each plant.
- 5) Purchase options and availability of plants are outlined.
- 6) Specialist advice on plants is provided to clients, customers and consultants in complex and/or difficult circumstances.

2 Provide specialist advice on products

- 1) Specialist advice is provided on products and services for specific situations and uses in accordance with sound forest management principles and practices.
- 2) Use and performance characteristics are provided.
- 3) Purchase options and availability are outlined.
- 4) Specialist advice on products is provided to clients, customers and consultants in complex and/or difficult circumstances.

3 Provide specialist advice on treatments

- 1) Specialist advice is provided for specific situations and uses in accordance with sound forest management principles and practices.
- 2) Use and performance characteristics of treatments are communicated.
- 3) Purchase options and availability are outlined.
- 4) Specialist advice on treatments is provided to clients, customers and consultants in complex and/or difficult circumstances.

Range of Variables

- Products include those associated with forest management operations, forest harvesting operations or tree care and management
- Treatments may relate to complex situations, tree assessments, pruning, removal, pest control, soil amelioration, fertilising, earthforming
- Complex and/or difficult circumstances includes project management meetings, legal representation, conflict and confrontational situations, guest speaking to industry groups, community groups
- Propagation, growing-on, plant maintenance and management, softscape and hardscape domestic landscape components, tools and equipment
- Chemical applications.

Evidence Guide

Critical underpinning knowledge

- Specialist plants, products and treatments for specific situations
- Advanced forest management principles and practices
- Responsibilities and liabilities in respect to the provision of specialist advice
- Customer and client service principles
- Project management meeting and public speaking protocols
- Innovation and recent practices in forest growing and management.

Critical underpinning skills

- Provide specialist advice on plants
- Provide specialist advice on forest management products
- Provide specialist advice on forest growing and management treatments.

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the national module HOR521 *Plant Selection* or equivalent
- Completion of the Learning Guide(s) for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include

- Relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills have been integrated and applied in a workplace setting or other specified setting.

Occupational health and safety issues

Care should be exercised where specialist advice involves machinery and equipment or use of hazardous chemicals.

Environmental issues

Care should be exercised where specialist advice may have a potential deleterious effect on the environment. Environmental considerations should be included as part of the recommendation.

Description

This is an industry-endorsed unit of competence from the Production and Recreational horticultural sector of the Rural Industries.

This unit of competency is concerned with the marketing of products and services.

Product and services marketing is likely to be undertaken alone or under limited guidance in line with a broad plan, budget or strategy. Competency at this level involves the self-directed development of knowledge with substantial depth across a number of areas with a range of skills. Product and services competencies are usually used independently and are substantially non-routine. Significant judgement is required.

1 Evaluate relevant markets

- 1) Markets for existing or new product opportunities for the organisation are identified, researched and analysed for possible entry and/or development.

2 Develop marketing strategies and plans

- 1) Alternative and innovative marketing strategies for the business are identified and compared with existing system.
- 2) Marketing services organisations are identified and services accessed where appropriate.
- 3) Plan is developed detailing products, markets, channels of distribution, promotion strategies and pricing strategies which respond to the defined business strategies and plans.

3 Implement the marketing strategy

- 1) Task requirements of the marketing plan are documented and communicated to the relevant groups and individuals.
- 2) Marketing strategy is monitored for effectiveness in relation to the plan, and responses suitable to the requirements of the business are developed.
- 3) Marketing outcomes are recorded, analysed and compared with target, and utilised to review and revise plans.

4 Determine requirements of import/export strategies

- 1) Requirements of import/export activities are identified, and organisation responsibilities and obligations determined.
- 2) Business strategies, procedures and practices for import/export activities are identified, documented and integrated into business, marketing and production plans.

5 Sell products

- 1) Relevant buyers in target markets are identified, sales plans developed, and selling strategies implemented in line with business, marketing and production capacity.

Range of Variables

- Relevant markets may include wholesalers, retailers, exporters, international customers
- Marketing strategies may include price, promotion, product quality, distribution channels
- Marketing techniques may include vertical integration, exporting, targeting seasonal windows, niche marketing
- Selling may include direct sales, consignment, auctions, supply contracting
- Market environment may include consumer trends, harvesting, handling and marketing methods, export opportunities, trade policies, seasonal influences.

Evidence Guide*Critical underpinning knowledge*

- Marketing principles and practice
- Import and export strategies

Critical underpinning skills

- Evaluate relevant markets
- Develop marketing strategies and plans
- Implement the marketing strategy
- Determine requirements of import/export strategies
- Sell products

Evidence of acquisition of underpinning knowledge and skills can be demonstrated through the following:

- Presentation of a Statement of Attainment from a Registered Training Organisation for the national module HOR606 *Marketing* and HOR614 *Exporting* or equivalent
- Completion of the Learning Guide(s) for the respective national module(s) or equivalent to the Workplace Assessor's satisfaction
- Relevant work reports, testimonials, references and examples of work and/or
- Demonstration of knowledge and skills for the Workplace Assessor.

Evidence of achievement of the Performance Criteria of this unit of competency can include

- Relevant work reports, testimonials, references and examples of work that verify that the underpinning knowledge and skills have been integrated and applied in a workplace setting or other specified setting.

Occupational health and safety issues

Not applicable

Environmental issues

Not applicable